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OUR HINTS ON THE WORK FOR THE MONTH.

IN our hints and directions on the work for each month, as plowing, sowing seeds, planting trees, &c., it will be observed that they do not, in all cases, appear to be adapted for the season. But when the wide extent of country is considered, to which these directions are presumed to apply, together with the variety of climates embraced, at a time, within its limits, it is obvious that discrepancies, in these respects, must unavoidably occur. For instance, in the southern parts of Florida, Louisiana, and of Texas, where frost seldom or never is known, the operations of planting, harvesting, &c., may generally be commenced at least a month earlier than in the northern parts of Carolina, Arkansas, and of Tennessee. Again, similar operations on the farm, in the southern parts of Virginia, Kentucky, and of Missouri, may be commenced a month or two earlier than in Maine, New Hampshire, Vermont, or in the northern part of New York.

Hence the necessity, in general directions like those under consideration, of adapting them to the most southern limits of the regions they are designed to be applied. If too early for the first of the month in which they are published. the sagacious husbandman can readily postpone them a few weeks, when nature and experience should alone be his guide.

WORK FOR APRIL, NORTH AND WEST.

General Remarks.—All work neglected to be done last month or impracticable to be performed in consequence of frost or snow, as directed in our last number, may be accomplished in this. *Fences* may be repaired or new ones built; *sward-bound meadows and old fields*, as well as fields of *winter wheat and rye*, may be harrowed, top-dressed, seeded, and rolled; *tobacco beds* prepared and sown; the operations of the *kitchen garden*, *market*

gardens, fruit garden, flower garden, orchard, pleasure grounds, and the *allotment, or classification of spring crops,* may still be performed agreeably to our directions for March.

Plowing and Pulverizing Ground for Spring Crops.—All grounds not already prepared for spring crops, that have become sufficiently dry, may now be properly and *deeply* plowed, leaving no balks, and laying the furrow slices flat. We emphasize the word "deeply," implying that deep cultivation is indispensable, if we wish to develope the full capability of the soil; and that, under equal circumstances, the land, (very loose, sandy, soils excepted,) which is subsoiled, whether by plow, fork, or spade, will always produce the largest crops, since it is well known that the complete airing of the soil, from a depth of 12 to 20 inches, greatly facilitates those chemical changes which have been proved to be essentially requisite in promoting the healthy growth of plants. The subsoiling of hard or gravelly soils should be commenced as early as the season will permit, first by opening the furrow as deeply as possible with a common four-horse plow, and then following with the subsoil plow, drawn by four or six horses, by which means the ground will thoroughly be broken up, and shattered to a depth of 14 to 20 inches. The operation will be slow, to be sure, as not more than three fourths of an acre can be plowed in a day, and the wear and tear of tackle and teams will be great; but all this will be counterbalanced by the saving of labor and the increase of future crops; and besides, every description of subsequent culture will easily be effected more cheaply in a loose soil, than in one that is hard, like a turnpike road.

In *harrowing* newly-plowed sod, it is better to commence at the "dead furrow," in the middle of the land, running lengthwise of the furrow, in diverging curves from the centre, and lapping the harrow at least one half. By this method, it will be found that, instead of tearing up the sod, it will smooth down the furrow slice, afford the team a better surface to walk upon, require less power, and in the end, more effectually perform the work.

Application of Manures, Sowing, &c.—In order to keep your land in good condition, with the exception of those newly-cleared, and rich "bottoms," or "intervals," you must add as much vegetable matter and chemical salts, in the form of fertilizers, as you carry off. If your land yield you large crops, you ought as liberally to furnish it with manure. Remember that you cannot constantly take out of the land, and add nothing, without impoverishing it; but you can add enough to supply all you carry off, and yet, in most cases, farm your land profitably.

In the application of manures, choice should be made of those only which contribute to the nourishment and perfect growth of the particular kinds of plants you cultivate, having reference, at the same time, to an *immediate* and a *continued* effect on the crops in rotation. As a general rule, common barnyard manure and guano, with occasional amendments by green-sand or potash marl, wood or vegetable ashes, coal ashes, soot, saltpetre and the refuse of powder mills, nitrate of soda, silicate of potash, common salt, ammoniacal liquor from the gas works, blood, urine and the offal of animals, fish, bristles, hair, wool, woollen rags and the refuse of woollen factories, burnt horn piths, bone dust, horn shavings, poudrette, lime, plaster of Paris, road scrapings and street manure, old mortar, brick dust, burnt clay, shell or coral sand, seaweed, marsh or pond muck, weeds, leaves and leaf mold, peat, charcoal dust, oil cake, cotton seed, green clover, buckwheat, vines of the cow pea, &c., will serve for almost every cultivated plant. Among these substances, plaster, charcoal dust, and potash marl, used in connexion with guano,—or, plaster, charcoal, bone dust, oyster-shell lime, and coral sand, applied in connexion with farmyard dung, will afford, perhaps, the most economical and best guarantee for a fair average return from a rotation of crops.

Guano and farmyard or stable manure, if applied alone before planting or sowing, should be plowed under to a depth of four to six inches, or they may be scattered and covered with earth in hills or drills. The same rule will also apply to the offal of animals, fish, hair, bristles, wool, woollen rags, horn shavings, horn piths, oil cake, cotton seed, weeds, and green crops. Lime, plaster, marl, coal ashes, charcoal dust, soot, old mortar, brick dust, burnt clay, coral sand, street manure, common salt, nitrate of soda, silicate of potash, bone dust, phosphate of lime, saltpetre, and the refuse of powder manufactories may be spread broadcast on the surface and harrowed in at the time of sowing the seed. The other fertilizers, as named above, may be employed in composts for top-dressings, or otherwise; and some of them may be used in a liquid state, after the plants to which they are to be applied have made some progress in their growth. This subject will be resumed from, month to month, as often as the season and circumstances may require.

All those who were not able to sow their *oats* last month, from the nature of the season, or climate, should lose no time in getting them in as early as possible. In the order of rotation, where the land is in good tilth, they may follow clover, flax, turnips, carrots, potatoes, wheat, rye, barley, peas, or Indian corn, without the addition of manure. But where the land is poor, there will be an increased yield by sowing each acre, broadcast, with 1 bushel of plaster, 5 bushels of wood ashes or the same quantity of oyster-shell lime, thorougly mixed with the seed. From 2 to 4 bushels of oats are sufficient to sow an acre, which should be well harrowed in and rolled.

Barley, also, should be sown as early this month as possible, at the rate of 2 to 4 bushels per acre. If intended to lay the field down to grass, there may be mixed with it 12 lbs. of clover seed, or 1 peck of Timothy, or 2 bushels of orchard grass seed per acre. In the order of rotation, barley may succeed wheat, oats, or a clover ley, on land in good condition, or a well-manured and cleanly-hoed crop of turnips, carrots, or Indian corn; but barnyard manures should never be applied directly to this grain, unless it be a light top-dressing of compost on different soils, or in moderate quantity after the plants are somewhat advanced in their growth.

Spring wheat may still be sown, but the earlier this is done the better. If your land has long been under cultivation and is in good tilth, the wheat, in rotation, may follow clover, flax, potatoes, turnips,

carrots, barley, or Indian corn. But if it be poor, it will be useless to attempt this crop without the addition of some fertilizer or dung. On soils only moderately rich in vegetable matter or the remains of organic manures, which were applied to the previous crops, 200 lbs. of Peruvian guano or 30 cubic yards, (six cords,) of stable or barnyard manure may be plowed under with 12 bushels of bone dust, previous to sowing the seed; or, what would still be better, a top-dressing, spread broadcast just before harrowing in the grain, composed of 15 cubic yards, (three cords,) of barnyard manure, 100 lbs. of guano, 1 bushel of plaster of Paris, and 5 bushels each, of charcoal dust, wood ashes, oyster-shell lime, bone dust, and common salt. But if your land be exhausted by injudicious tillage, double the above-named quantities may be added whether used as a top-dressing or plowed in. Land thus treated will bear an excellent crop of wheat and will be in a good condition for rotation for a series of years. From 1¼ to 2 bushels of seed may be sown to an acre, previously washed several times in strong brine, or soaked two hours in a saturated solution of Glauber's salt, and then thoroughly mixed with 6 quarts of dry, powdered, air-slacked lime. If you design to lay the field down to grass, 8 quarts of clover seed, mixed with 6 quarts of Timothy, or 1 bushel of orchard-grass seed, may be sown to each acre with the wheat.

Indian corn, if the land be rich and in good tilth, may follow, in rotation, almost any of our field crops; but if it be poor, or "bound out" by grazing or cropping with hay, it is preferable to plant with potatoes the first year, and after harvesting them in the fall, to spread broadcast on each acre, 50 cubic yards, (ten cords,) of barnyard manure which should immediately be plowed in; and the spring following, 75 cubic yards, (fifteen cords,) of green, unfermented stable manure, spread on the surface and plowed under, should be added to bring the land in good heart. Then, as soon as the apple blossom begins to appear, and the Juneberry, (shad-bush,) is in full blow, or the "white-oak leaf, is of the size of a squirrel's ear," the corn may be planted and cultivated the usual way. But as comparatively few of our farmers, in the Atlantic states, have sufficient manure of this kind to apply to their lands, they must be fertilized by other and more economical means. In many localities, this may be done with oyster-shell lime, marl, wood ashes, guano, poudrette, fish, swamp and pond muck, composted or worked over by hogs, or the scrapings of roads and streets. If your land has not been previously limed or marled, by nature or otherwise, and the soil is rather thin, 25 bushels of lime to the acre, sown broadcast and harrowed in previous to planting, will be sufficient, or what would be equivalent, say 50 bushels of leached ashes or 100 bushels of marl. If the ground be in tolerable heart, double these quantities may be applied; but if stiff and clayey, or is rich in vegetable or organic remains, and is deficient in calcareous matter, 100 bushels of lime may be employed to the acre or 300 bushels of marl. Pigstye manure, street sweepings, and composts made of road scrapings, fish, guano, plaster of Paris, pond muck, &c., may be applied, in the hill, at the rate of 75 cubic yards or 15 cords per acre. Poudrette should not be used as an exclusive manure for corn, but may be applied at the time of planting by scattering a gill to each hill. The application of guano, fish, charcoal, plaster, oyster-shell lime, and coal or wood ashes will further be treated of in the after culture.

Early potatoes, if not planted last month, should be put in this, as soon as the season will permit. If the ground is not already sufficiently rich, each hill should receive about 3 quarts of horse manure and half a pint of oyster-shell lime, as soon as the potatoes are dropped, say 8 cords or 40 cubic yards to the acre. If planted on a mellow sod, no manure will be required other than the oyster-shell lime. In all cases, the soil should be well pulverized by the plow and harrow so as to be perfectly friable, dry, and loose. Cultivating in hills, say three feet apart each way, is the most convenient mode of tillage, as they admit of a more thorough stirring of the ground with the cultivator or plow. Two middling-sized potatoes, (say two inches in diameter,) or three small ones, (one inch in diameter,) may be dropped in each hill, then covered with the manure, and lastly with two or three inches of light earth. Three and a half bushels of the small-sized potatoes or 20 bushels of the larger ones will be sufficient to plant an acre. "Greening" the tubers in some warm apartment, as near a kitchen stove, for a few weeks previous to planting, will hasten the maturity of the crop. And potatoes with sprouted shoots, eight inches long, laid horizontally in the bottom of the hills have a tendency to increase the yields on account of a greater length of stem below ground.

Onions may be cultivated agreeably to the directions given at pp. 105 and 141, of our seventh volume; and *celery* as directed at p. 78 of the same.

For the cultivation of *carrots*, *parsnips*, *mangold wurtzel*, *beets*, &c., as field crops, the reader is referred to Allen's "American Farm Book," and our back volumes.

Any work omitted last month, as laid down in our March number, may be done this, if the forwardness of the season will permit.

Kitchen Garden.—Early cucumbers, melons, cabbages, cauliflowers, lettuce, radishes, &c., which have been brought forward in hot beds, should be transplanted this month into open ground. Let the asparagus beds be attended to. Sow the various kinds of table vegetables and early root crops for open culture. Tomatoes, eggplants, and peppers, that have been forwarded in pots, can be planted out the latter part of the month.

Fruit Garden and Orchard.—All kinds of northern fruit trees should be transplanted this month, before the leaf buds come out. Grafting and spring inoculation must also be performed. Strawberry beds may now be dressed, cleaned, and supplied with a small sprinkling of guano or some other stimulating manure. Currants, raspberries, and gooseberries, that have not received attention before, can now be pruned.

Flower Garden and Pleasure Grounds.—The ground about bulbs that have not yet started may now be forked or hoed. Herbaceous perennials may be transplanted into flower borders. Hedges and shrubs may be trimmed and box-edging set out. Top-dress lawns.

WORK FOR APRIL, SOUTH.

Cultivation of Cotton.—At the beginning of this month, attend to the planting of cotton seed, and continue its culture as recommended at p. 81, of our second volume.

Rice.—Plant upland rice in drills about 18 inches apart, or sow broadcast and harrow in the seed as with lowland rice. Cover the ground two inches thick with old rice straw, in order to keep down grass and weeds and to nourish the crop. Irrigation is unnecessary in the cultivation of this variety of rice. It will grow on poor, sandy ridges as well as on lands that are wet. Continue to sow *lowland* rice as directed last month.

Cane Fields.—Attend to your cane fields; keep the earth loose and clear of weeds.

Tobacco Plants.—Occasionally stir the earth around your tobacco plants, both with the hand and the hoe. First, *shave* the surface, and after the plants increase in size, gradually draw a slight bed towards them. Examine the plants closely, every night and morning, and destroy the numerous worms which feed upon them. First, look for a small grub about the roots under ground, and afterwards a large ugly worm on the leaf. There is also a small worm which attacks the buds of the plant, and if not killed, will surely prevent its further growth. Another worm, of a still smaller size, may be found within the two coats of the leaves, which feeds on the juices of the plant alone.

Kitchen Garden.—During this month, plant tomatoes, cabbage, chives, early peas, leeks, parsley, beets, carrots, mustard, celery, eggplant, lettuce, roquet, radishes, (long and round,) beans, okra, cucumbers, melons, pumpkins, squashes, and Indian corn. Prepare your ground for sweet potatoes, as directed last month.

Fruit Garden, Shrubbery, &c.—Now is a good time to transplant evergreens of all kinds, including lemons and oranges. Let them be watered, until they take root.

CUTTING AND GRINDING SUGAR CANE.

From private letters from some of our southern friends, we observe that they take exceptions to our remarks in the "work for the months of January and February," in regard to cutting and grinding cane. In preparing these articles, a wider range must be admitted for all our readers, in point time and season, than can be limited to any individual or section. We have long been perfectly aware that the planters of Louisiana generally complete their cane harvest early in December. But the case is far different in the southern parts of Florida and in the south-easterly part of Texas, where we have numerous subscribers.

We make this explanation in relation to one product only, in order that our readers may fully understand that, *relative* periods can only be assigned for sowing, planting, and harvesting particular products, and that considerable variations must necessarily be made in applying our remarks to every section where our journal is read or known.

THE QUANTITY OF SEEDS USUALLY SOWN TO AN ACRE.

We are often applied to for information as to the proper quantity of field and garden seeds that is necessary to sow an acre of ground. This, it will be perceived, cannot be definitely answered, as all seeds differ in their degree of excitability, or rapidity of germination, and are influenced more or less by the moisture, temperature, and richness of the soil, as well as by the season and climate in which they are sown. Thus, no two seeds taken from the same seed vessel will germinate precisely at the same time, but on the contrary, one will often do so promptly, while its companion seed will remain dormant in the soil for one or more years.

For instance, fresh tobacco seedlings have been known to continue to appear annually for ten years on the same plot, though no seed was sown after the first year. The same phenomenon often occurs for two or three years, with the hawthorn, the peony, and other plants. Why one seed is more easily excited than another is as yet unexplained.

The quantity of field seeds usually sown broadcast per acre, in this country, is as follows:—

Wheat,	1¼ to 2	bushels.
Barley,	1½ " 2½	"
Oats,	2 " 4	"
Rye,	1 " 2	"
Buckwheat,	¾ " 1½	"
Millet,	1 " 1½	"
Indian corn,	1 " 2	"
Rice,	2 " 2½	"
Beans,	2 " 3	"
Peas,	2½ " 3½	"
Hemp,	1 " 1½	"
Flax,	½ " 2	"
Timothy,	12 " 24	quarts.
Mustard,	8 " 20	"
Herd's grass, (red top,)	12 " 16	"
Flat turnip,	2 " 3	lbs.
Red clover,	10 " 16	"
White clover,	3 " 4	"
Kentucky blue grass,	10 " 15	"
Ray grass,	10 " 16	"
Orchard grass, cock's foot,	20 " 30	"

The following table shows the quantity of seeds usually sown to an acre in rows or drills:—

Cotton seed,	2 to 5	bushels
Broom corn,	1 " 1½	"
Beans,	1½ " 2	"
Peas,	1½ " 2	"
Peanuts,	1 " 2	"
Potatoes,	3 " 25	"
Weld,	2 " 4	quarts
Woad,	4 " 6	lbs.
Lucern,	8 " 10	"
Onions,	4 " 5	"
Carrots,	2 " 2½	"
Parsnips,	4 " 5	"
Beets,	4 " 6	"

BROWN CORN.

Distances of hills apart.	Quantity required 4 grs. to a hill.	Quantity required 5 grs. to a hill.
Feet. Feet.	Quarts.	Quarts.
3 by 2	14.5	18.2
3 " 3	9.7	12.1
3½ " 3	8.3	10.4
3½ " 3½	7.1	8.9
4 " 3	7.3	9.1
4 " 3½	6.2	7.8
4 " 4	5.4	6.8

ECONOMICAL BEE HOUSE.

One of the most delusive errors of the age, which I have had to combat with, is the prevailing opinion among bee keepers of this country, and I might add, of the whole world, that bees should be kept as warm as possible in winter, especially, and at all other times when the thermometer does not rise above 80° or 90°F. In order to produce the desired heat, bee houses are constructed, as warm as possible, fronting the south, of course; and, during the heat of summer, the hives stand exposed, perhaps, to the full rays of the sun, with not a breath of air circulating around them, and where a steak could almost be broiled, if necessary. If not fully exposed to the rays of the sun, the heat merely from reflection, is so intense that the labors of this insect are often entirely suspended, and they are seen clustering upon the outsides of their hives, utterly unable to exist within.

There seems to be a pall of moral darkness hovering over the management of bees, from one end of the globe to the other. While the march of intellect is making the most rapid strides to perfection in the arts; while every branch of science and industry is moving onward, the management of the little bee is clouded with tradition and superstition, and now lies, almost precisely where it did in the days of Aristotle and Pliny.

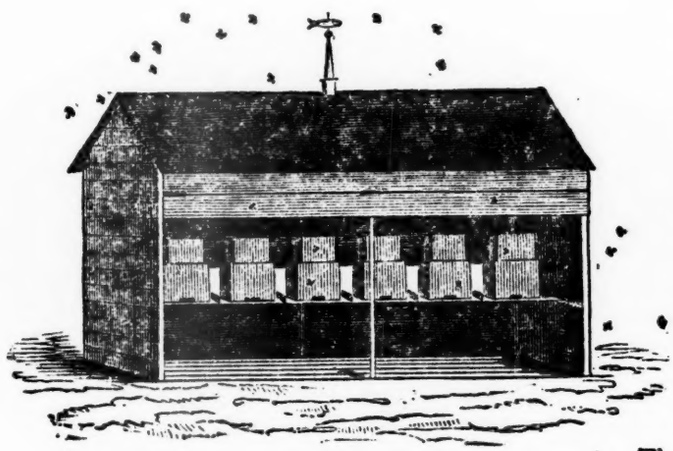

Fig. 27. Bee House.

It is true, many persons have attempted a revolution in the labors of the bee, seeking by art and invention to draw from her, great and unprecedented gatherings of the mellifluous juices; but they have greatly mistaken the nature of the insect, with which they have to deal. She requires not the aid of man, to teach her the art of producing honey. Perfect in her labors, she stands forth a pattern for man to follow—not by him to be turned aside from the course that God has laid before her. She requires no stimulus, or incentive to action from us, but only asks a tenement of the proper dimensions, and her just inheritance of the air of heaven, that is cruelly withheld from her, through ignorance, and she will perform all that nature demands of her.

By the thousand-and-one complicated inventions of the day, that have nothing but their novelty to recommend them, the bee is retarded, athwarted, and well nigh broken down in her vigorous, primeval spirit, that actuates her in the forest, where she has nature alone to deal with. The only manner in which we can aid her in her labors, is to permit her to carry out her own natural habits and customs, to the greatest possible extent. She wants no *screens*, *bars*, *tubes*, *ventilators*, nor other *humbuggery* about her; but simply the free use of her own powers—her own instinct and reason, to protect her from the dangers of every foe.

The preceding cut shows a bee house twelve feet long, five feet wide, and six feet high to the plates that receive the roof. It is simply clapboarded up against ordinary joists. It may be ceiled or plastered on the inside, if desirable. There is an opening in the rear, one foot wide, as may be perceived in the illustration. This is the principle that I have introduced, and which is entirely new. It is a principle that can never be subverted, and it is also a principle, that needs only to be explained, to carry conviction to every man's mind of its necessity.

It will also be perceived by the engraving, that a couple of boards are placed in front, under the eves of the roof. The lower one is hung to the upper one by butt hinges, and is susceptible of being raised, and let down, at pleasure. This is another improvement that I submit. The object of this movable board, is to allow the rays of the sun to enter freely, in the months of March, April, and May; when the larvæ are in progress of development, and at the only season when bees require the benefit of the sun; that is, to shine fully upon the hives. In the summer, fall, and winter, it is to be let down, and thus shade the hives as much as possible.

The opening in the rear of the building is one foot wide; to close which, a shutter is made of a single board, well cleated to prevent warping, as well as that in front also. It is hung on hinges, and is to be kept open at all seasons except in the months of March, April, and May as above, or when it should be temporarily closed, during the prevalence of very high winds, when the bees meet with difficulty in alighting at the hives, on their return from the fields.

The hives may rest on a shelf floor board, so arranged as to be moved back and forward at pleasure. The benefit of this is, to place the hives in the spring, where the rays of the sun will fully reach them, and when warm weather approaches, to move them back where they will be in the shade. In the winter season, they should be moved back, and the rear shutter kept raised. By this course, the bees will not feel inclined to go abroad much, and especially when the ground is covered with snow; not one bee in ten will leave the hives, that would come forth, if this opening did not exist. I need not here inform the reader, how many thousand families of bees are destroyed in this country annually, by so placing them, that false and deceptive appearances of the temperature of the atmosphere allure them to their destruction.

Hives may be suspended, or they may rest on stools in a house of this character. I simply give the principle of its construction, and the apiarian may build of such size as he may choose, and

place it wherever he may please. A house of this description, constructed of bricks, has great merit; but I cannot go further in the details of this highly important subject on this occasion. The whole is fully and elaborately discussed in my "Manual" of 349 pages about to be issued from the press, the character of which has not been overrated. I have concluded an arrangement with one of the most extensive publishing houses in Broadway, to forward the plates to England, for the purpose of appearing there, simultaneously with its publication here.

T. B. MINER.

New York, Feb. 15th, 1849.

ADULTERATION OF FOOD.—No. 10.

Catchup.—The article imported under the name of "walnut catchup" is usually strongly impregnated with the salts of copper. In fact, this condiment is often nothing else than the residue left after the process employed for obtaining distilled vinegar, subsequently diluted with a decoction of the outer, green bark of the English walnut, (Madeira nut,) and seasoned with allspice, Cayenne pepper, onions, and common salt.

When catchup, or indeed any sauce, is prepared by boiling in a copper or brass vessel, it invariably retains traces, and even large proportions of copper on the one hand, and of copper and zinc on the other, both of which, to a greater or less extent, are dangerous in use. Thus, in making walnut catchup, the outer green shell of the nut, or the juice of the same, is usually boiled in a copper vessel after having been suffered to turn black, by exposure to the air in combination with common salt, with anchovies, garlic, shalotes, cloves, allspice, mace, pepper, ginger, horseradish, vinegar, &c., the produce of which must always be contaminated with metallic salts. The only method by which this evil can be avoided, is to have the inner surface of the copper employed well tinned, or to use salt-glazed earthen vessels, or those made of iron properly enamelled within.

At present, both mushroom and walnut catchup, are manufactured in a similar manner; and in many instances, the former is often adulterated with from one fourth to two thirds of the latter. In fact, many of the articles imported and sold in this country under the names of walnut and mushroom catchup, consists of a heterogenous mixture of all kinds of materials that are convertible into the semblance of catchup.

Olive Oil.—The adulteration olive or salad oil is generally subject to, is the addition of nut oil, oil of poppies, lard oil, and other animal or vegetable oils of inferior quality and price. Sometimes it contains a poisonous admixture of lead or zinc, which is accidentally derived from some of the vessels employed in its manufacture, as is practiced in Spain, by suffering the oil to become clear in leaden cisterns before it is brought to market for sale.

Olive oil, it is well known, is the product from the pulp of the fruit of the olive, and when pure, is slightly yellow, or greenish yellow, (more especially when new,) very fluid, slightly odorous, and possesses a soft and agreeable taste. It is one of the least changeable of oils, but when not carefully made, soon becomes rancid, and then possesses a very disagreeable taste and smell. If pure, when shaken in a vial only half filled, the "bead," or bubbles, rapidly disappear; but if adulterated with poppy or nut oil, they continue longer before they burst. Olive oil is also completely congealed when cooled by ice; but the oil of poppies remains partly liquid, even when it forms less than one fourth of the bulk; and nut oil, the extract of the kernel of the Madeira nut, (*Juglans regia,*) is still more easily detected, as it does not solidify before it reaches a temperature of 16° below zero of Fahrenheit's scale. As the specific gravity of olive oil is less than either that of nut oil or that of the oil of poppies, its density will accordingly be increased in proportion to the adulteration of the two last named.

The addition of lard oil can easily be detected by the taste and smell, particularly when the suspected article is heated, or slightly burnt over a brisk fire.

THE COW—HER DISEASES AND MANAGEMENT. No. 11.

Blain, or Blistered Tongue.—This disease generally prevails during the months of March, April, and May. Its attacks are most frequent with cows which have been brought in lean and low in condition, and have begun to thrive and get into a better state. It also comes on when the weather is somewhat variable, as those days which are alternated with sunshine and storms, or showers of rain or snow.

The malady evidently proceeds from too great a fullness of the arteries, by which too great a quantity of blood is determined to the head of the animal, as well as to the whole external parts. Hence the regular circulation is altered, and a state of stagnation is produced in the various parts of the body.

The first symptoms that show themselves are a swelling of the eyes and eyelids, as well as of the fundament, "shape," udder, and teats, all of which assume, more or less, a purple appearance. In the progress of the disease, the distress of the animal is so great, that she opens her mouth wide, extending her tongue out of it to the utmost stretch, from which issues a considerable quantity of watery and frothy fluid. On examing the tongue, a large blister generally appears on its under side, and the inside of the mouth sometimes assumes a purplish hue.

When the disease advances to this height, the whole of the skin acquires a similar state of swelling as that described in the tongue, from the rapid determination of the blood to the surface. Indeed, the body of the cow, when touched, sometimes feels quite moist, and the roots of the hair become surfeited with blood.

This malady is considered as highly dangerous, if not timely remedied and diligently attended to. The first and most certain means of relief is copious bleeding; and if performed on the first attack, the cure may be considered as certain. At this stage of the disease, a common fleam will be sufficient for the operation, and a quantity of blood not less than two or three quarts may be taken away. By this discharge, the symptoms of the swelling will abate in every part of the body; but if the operation has been delayed till the disease has gained ground, the lancet, or a sharp-pointed knife must be used, which it will often be necessary to

penetrate into the jugular vein no less than two inches and a half, from the thickness of the skin, before the requisite evacuation can be effected. Should the operator be timid, and the animal show symptoms of immediate danger, the same relief may be obtained by cutting off a piece from the tail or ear, or by thrusting a slender-bladed knife through the gristle of the nose. When the operation of bleeding is complete, and some abatement of the disease obtained, the following medicine may be given, at one dose, in two quarts of warm water gruel, made of oat or Indian meal, in which half a pint of molasses has been previously mixed :—

Epsom salts, ¾ lb ; mustard, in powder, 1½ oz. ; aniseed, powdered, ¾ oz. ; juniper berries, powdered, 1½ oz. ; saltpetre, (nitre,) ¾ oz.

This medicine must be varied in its dose according to the size and strength of the animal; as one and a half pounds of Epsom salts will be necessary for cows of a larger size, while the quantity as directed above will be sufficient for small ones. If the medicine prove laxative, it will be unnecessary to give more; but should it not have any effect in sixteen hours, the dose may be repeated.

The blisters under the tongue, generally require a particular management; first by breaking them, and then rubbing the parts with salt and vinegar, which will resist the effects of the inflammation, and effect a cure.

In three or four days after the abatement of the disease, the hide of the animal sometimes becomes extremely hard, and particularly so on each side of the fore ribs: and this hardness so increases that this part of the skin will be lifeless and destroyed. In the course of a fortnight it will gradually separate from the body, bringing with it the hair and its roots, in the place of which a fresh skin will be formed, with the exception of a few points, that will be somewhat more tedious to heal. In the latter case, the operation of bleeding and purging with Epsom salts, as directed above, should be succeeded by the following diaphoretic medicine, administered at one dose, in three pints of mild beer or ale, to be repeated every day, or every other day, as circumstances may require, until the cure is complete :—

Sulphur, 3 oz. ; saltpetre, ¾ oz. ; valerian, ¾ oz. ; camphor, 1½ drachms ; grains of Paradise, 3 drachms.

During the continuance of the before-named medicines, the regimen of the cow should consist of water gruel, warm mashes made of malt and bran, or Indian meal, given with sweet hay, which should be followed for some days before she is made to return to her usual feeding.

PER CENTAGE OF OIL PRODUCED BY VARIOUS SEEDS.—The oils contained in various seeds, as given by Professor Johnston, are as follows :—

	per cent.
Flax seed, - -	11 to 22
Hemp seed, - -	14 " 25
Rape seed, - -	40 " 70
White mustard seed, -	36 " 38
Sweet almonds, - -	40 " 54
Bitter almonds, - -	28 " 46

AGRICULTURAL EDUCATION IN BAVARIA.

THE agriculture of Bavaria, for some years past, has experienced a great improvement in consequence of the system of national education which has been adopted, and by the teaching of agriculture and gardening both by books and examples in the schools. One of the first consequences was an *improved rotation of crops*. Almost the whole of this advancement originated with M. Hazzi, an agricultural writer and editor of an agricultural paper, in Munich. The activity and patriotic exertions of this gentleman are beyond all praise. It was chiefly through his labors that a piece of ground was added to every parochial school in Bavaria, to be cultivated by the larger pupils in their leisure hours, under the direction of their teacher.

In these schools the boys were practically taught agriculture, horticulture, domestic economy, and forest as well as orchard culture, by the aid of small duodecimo catechisms, illustrated by wood cuts, which were afforded for seven or eight cents per volume. The girls are taught, in a similar manner, domestic economy, including cookery, and the rearing and management of silkworms.

Since these schools have come into existence, an entirely new generation of cultivators have arisen, and the consequence has been, that agriculture in Bavaria, more especially what may be called "cottage agriculture," or rural economy, has been carried to a higher degree of perfection than in any other state in Central Germany.

As a powerful means of extending a knowledge of improved husbandry in the United States, it is believed that if a similar plan were adopted in our common schools, this great object could be attained.

SUGAR CANE ON WORN-OUT COTTON LANDS.

WE have recently been gratified by the notice from a southern correspondent, of the luxuriant growth of the cane upon worn-out cotton uplands. This seems to have been looked upon with much wonder and admiration, by such as are not properly versed in the first principles of agricultural science. The land which had become exhausted by the constant cropping of corn and cotton, is found to produce largely of a plant never before grown upon it. This is simply a good illustration of the beneficial effects of *rotation*, one of the great and important discoveries of modern times. The available matters of nutrition for certain plants have become exhausted in the proportion required, leaving others, however, in sufficient quantities to provide a full supply to a different class of plants. On occupying the field with these, a luxuriant growth is the result, which the scientific farmer would have confidently expected, but which the novice and unreflecting, more especially the *non-reading* portion of the community, look upon with unmitigated surprise. This is one aspect of the case, and the same non-reading class are destined to another disappointment, but in opposite direction. Like the simpleton who accidentally found a knife, they will be looking constantly at the same place for another, which they may never be destined to find.

If sugar cane be continually replanted on the same field, without the addition of manures, this crop, too, will be found to exhaust its proper pabulum or fertilizing ingredients, and soon it will yield

no more sugar than it now does of cotton or corn. *Rotation*, with the addition of *specific manures*, (such as contain the silicate of potash, the carbonates of lime and potash, the phosphates of lime, soda, and magnesia, phosphoric acid, the oxides of iron, &c., &c., the ingredients most essential to the successful growth of the cane, or those which are most largely taken up by it,) will be found the only means of securing the continuance of good and satisfactory crops.

REVIEW OF THE JANUARY NUMBER OF THE AGRICULTURIST.

Rough Notes by the Way, No. 5.—Mr. A. is mistaken in supposing that the readers of the Agriculturist are so matter-of-fact sort of people that his details would prove tedious. It is these little gossipping items that are the most interesting. It is the great error of nearly all agricultural papers, that they are too much filled with matter-of-fact essays, to interest the million. "The pill must be gilded to be readily swallowed."

American Indestructible Mineral Paint.—If this new substance proves to be one half that it seems to promise, it is one of the most valuable discoveries of the age. This notice would have been much more satisfactory if it had given the cost, for instance, of covering 100 square feet of shingle roof with a sufficient coat. The great difficulty, so far as I have observed, in covering roofs with any preparation of earthy material, arises from the shrinking and swelling of wood in our variable climate, which cracks the covering. I should like to know whether this material is effected in this way. Also, how far it is fire-proof. What degree of heat will an ordinary coating of it stand without injury? It certainly cannot be pretended that the wood will char without destroying the coating, or that it would prevent a roof from taking fire under a high degree of heat. It would appear from this statement, that it is indestructible in water also. If applied to the surface of a wooden cistern, how far would it answer as a substitute for cement? When applied to cloth, does folding crack it? If not, a kind of salamander dress might be made of it.

Adulteration of Food—Lozenges, &c.—One of the best remedies against the dangerous effects of these vile adulterations and poisonings is, never to put the dirty trash in your mouth, and you never will be injured; and if all would pursue the same course, the manufacturers would soon be driven to some more honest employment.

Shearing Horses.—I have heard of a certain other animal being sheared by a certain old fellow with a tail, and it is said there was "a great cry, and but little wool." Whether the profit of horse-shearing is about the same, this deponent sayeth not, but he thinketh.

Wire Fences.—This is a most important subject, and a very interesting article. The only objection to this statement of Mr. Peters' is, that he has built the fence too cheap. I am not prepared to believe that wire fence can be built so much cheaper than board fence. In fact, it does not much exceed the cost of ordinary rail fence on a new woodland farm. And in many parts of the country, if the cost, as made out by Mr. Peters, was quadrupled, it would still be the cheapest fence that could be built. The matter of building wire fences is well worth the attention of prairie farmers. And so it is of those on Long Island, and in parts of New Jersey, Delaware, and Maryland. Yes, and in good old New England, too, except where it is absolutely necessary to get rid of stone. And it strikes me that farming is very expensive on the lower part of the Mississippi River; though it is so long since I have been in that region that I cannot say for certain that wire fences would be cheaper than those of wood. But I *guess* so.

Hints on Enclosures in Rural Cemeteries.—As an addition to these hints, I would hint at a wire fence, which, until the shrubbery is grown, would be the prettiest of all other fences, as not giving the least obstruction to the view of whatever may be growing inside.

Agricultural Tour South and West, No. 1.—This number indicates that more is coming. Well, I am glad of it. And I trust we may look for something interesting every month. I should like to criticise our old friend Solon a little, now and then, but somehow or other, he don't seem to bear it right well from me; at any rate, I have been rather unfortunate in trying to work myself into his good graces.

Plowing with Elephants in India.—I don't know exactly about *plowing* with them, but if sundry of our "fellow citizens" don't get a view of the animal *digging* in California, I shall be greatly mistaken in the signs of the times, and I am inclined to think it will not be the "docile little animal" here mentioned, either; but one of full size.

Ventilate Your Stables.—Yes, and houses, too. Recollect that pure air is as necessary for humans, as horned cattle.

Agricultural Capabilities of Florida.—It is said in this article that the sugar cane, in Florida, tassels and flowers. Does it ever bear seed? [No.] I have no doubt of the descriptive truth of this article of the capabilities of this state, though the cultivable portion of it is comparatively small, and, notwithstanding the wet part could be so easily drained, and made equally fertile, I prophecy that congress will not do it. That would be an undertaking altogether too much of a utilitarian character, to suit that body of demagogues and brawlers. They would prefer spending ten millions of dollars any time in killing Seminoles, and filling scoundrel contractors' pockets, than a single cent for agricultural improvement.

"*A bright plow share* is the cheapest commodity ever used by a farmer," *except* the good health obtained in keeping it so.

Farms of Messrs. Wadsworth and Ayrault.—I only notice this article merely to welcome our old acquaintance, Mr. Sotham, once more, in the columns of the Agriculturist, and to see him still doing battle for the Herefords, like a noble and true champion as he is of this noble breed of cattle. The picture that he gives of the meadows of Messrs. W. & A. is such as no doubt drew his thoughts to his own native land. The delightful shade trees, under which the stock could shield themselves from a burning sun, are, in my opinion, one of the greatest ornaments of a farm. Here he found the black walnut and butternut, the sugar maple, than which a finer shade tree never grew; besides the fine old oaks, whose extraordinary dimensions

showed that the "woodman spared that tree," when the original forest was swept away by the axe in "auld lang syne." I love the grandeur of these old trees, the landmarks of an age and people whose very existence is fast fading from the recollection of the present generation. I like very much the notice, coming, as it does, from an Englishman, of those "American cottages." When I was last on the farm of Mr. Ayrault, they were not built; but the old oaks were there, and I hope no barbarian will ever remove them, while nature continues to clothe them in the green leaves of summer. It is said that tastes differ; but I say that any man who would destroy one of these old trees, or disfigure a fine natural landscape, with such "rude attempts at architecture," as Mr. Sotham speaks of, are utterly destitute of taste—they have none to differ with. Mr. S. says, "it is impossible to keep lands in condition without sheep and cattle." Not so. Judicious culture, proper rotation, turning in of green crops, lime, plaster, ashes, and artificial manures will keep land in good condition without cattle or sheep. Though I am free to acknowledge that stock are much the most profitable manure makers, upon nearly all farms.

Guano.—This statement is conclusive as to the cheap fertilizing properties of guano. A fact that I never doubted. How could I, when it consists of ammonia and phosphate of lime? But I still reiterate the question, is it necessary to go to Peru after these substances?

Season for Felling Resinous Timber.—Here is a text that ought to be reiterated and well studied. "In cutting timber of all kinds, advantage should be taken of the season which will favor their duration and strength." No general directions can be given as to the right time to cut timber that will suit all this country, and all kinds of timber. A very valuable article might be made, which would give a short sketch of each kind of tree, and the proper time for felling it for timber, and also for destruction, in different parts of the United States, where our climate is so diversified, and timber known by so many different names. [It cannot be done, Captain. Experiments have never been made with sufficient care to compile such an article.]

Remarks on the Principles of Breeding.—I have ever been of the opinion, notwithstanding the good results of cross-breeding, that a good animal should not be set aside for relationship alone; but that, breeding in-and-in, with good stock, is better than breeding out, till all the good points are out. The remarks upon keeping breeding mothers too fat are very correct. It is a foolish waste of food. There are some sows, however, that it is very difficult to keep sufficiently low in flesh, while breeding, as they seem to have, at that time, a natural tendency to take on fat. Color, it is said, in this article, is hereditary, and cannot be got rid of, except by crossing. It strikes me that I read somewhere, when I was a boy, of a certain young man who was tending the flocks of an old fellow, who had a daughter that he wished to marry, succeeding pretty well in changing the color by an exhibition of "peeled sticks;" though he might have set them crosswise; and hence the name of "cross-breeding."

Beware of the Ring Bone.—I only notice this article, to approve of standing, not only colts, but all kinds of horses upon earth floors. In order to make them, take stiff clay, and, if convenient, mix with it as much gravel, and moisten as can conveniently be done, and make the stable floor of this, a foot higher than the ground outside, by pounding it in the most solid manner, and a little sloping, so as to carry the water off. It will last a long time, and is much better than a plank floor.

The Cotton Crop.—It appears to me that these calculations every year, as to what this great crop is going to be, is about one half of it guess work. No doubt the information of Dr. Philips is such as will enable him to *guess* as well as anybody else; but who can tell before it is too late to profit by it, whether he has *guessed* right or not? The calculations and directions of the Dr. how to make the Mississippi cotton lands produce from 300 to 500 pounds more to the acre than they now do, is all very good, but it would be vastly better for all the cotton planters, if he could tell them how to produce one half the quantity that they now do for ten years, unless they will manufacture some of the surplus at home. Suppose, under the present system, the crop should be increased 50 per cent., and the New-Orleans market crowded with 1,800,000 bales every year. Would the planter obtain any more money than he now does, or did, when the crop was only half its present size? If not, why increase it?

Cheap Method of Fattening Poultry.—"Good enough to sell." I have heard of a plan for fattening hogs upon this *cheap system.* Confine three hogs in a slip so narrow that they cannot turn round. Feed the first on whole corn, and he merely will grind it for the second, which will beat the first in fattening, while the third will make as good pork as the first. Whether the plan could be carried out any further by confining a goose, duck, or hen, in a row behind, I am not able to say, nor what would be the quality of the meat.

Steam Power for Agricultural Purposes.—So your recent "English papers" have brought you a description of a "Steam Excavator." I wonder if it is Page's ditching machine, of Baltimore; or has some other Yankee gone over to England to get in operation a machine that his own countrymen failed to appreciate? Excavating machines have been at work, in this country, many years, the principle of which is undoubtedly the same as this. Truly, there is no need of importing such a machine, if our people are disposed to patronize Yankee invention.

Upland, or Mountain Rice.—Will this grain grow at the north, and how far? Has anybody ever tried "hulled wheat," as a substitute for rice? And if so, how does anybody, and his wife, like the substitute?

The Best Manure for Sugar Cane.—If the trash is burnt upon the land, will it benefit the plant anything like as much as plowing it in? When I was in the south, some twenty years ago, the common practice was, to set fire to the trash, and burn it as it lay spread over the ground. I wish some of your southern correspondents would enlighten us upon this subject. Another thing—what becomes of the cane stalks after the juice is extracted? Are they used for manure or for fuel? [They are sometimes plowed under, but generally are burnt or

allowed to rot in heaps, or are thrown into the river.—EDS.]

Pear Trees Injured by Insects.—What a valuable and interesting article this is under this head, from two practical and scientific men. Although it might look like a great job to go over a large orchard with such a wash; yet, if the insect could thereby be got rid of, it would well pay the cost and trouble. I am inclined to think that the disease is spreading somewhat extensively, and it, therefore, becomes the interest of readers to have their attention called to this article, that they may read it again.

Importation of Pure-bred Saxony Sheep.—Mr. Taintor is certainly entitled to much credit for his enterprise in getting into this country some of the best sheep ever imported. I hope he may meet his reward, if not in dollars, in an approving conscience, for the vast benefit he may confer upon his country by the manner he uses his wealth. If the little meed of commendation that I am able to bestow upon him, will serve as the least fraction of satisfaction to him, I shall think I have only done my duty by so doing. But what effect are those "immense flocks now forming on the sea of Azof" to have upon this country? If to reduce the price of wool below its present value, one million acres of equally well-suited land might as well lie idle, as to be made into sheep walks. Men will look for business that brings more profit.

Southern Matters.—I am pleased to see that this New-Orleans branch of the great Agricultural Warehouse is not to be broken up. Not that it is of any particular interest to me, but because I look upon every establishment of this sort, as a kind of entering wedge of improvement in the condition of the agriculture of the country. If this Mr. Franklin is the old cotton merchant that I used to know in New Orleans, some years ago, when I was in the freighting business there, the establishment has fallen into good hands—one who may be depended upon for integrity, though I presume his knowledge of agricultural matters is not equal to that of R. L. A.; yet, if I mistake not, he was raised upon a New-England Farm. I hope the business will grow to be equal to that of New York. It will be for planters' interest to patronize this establishment in New Orleans.

Small Holdings.—This is one of the beauties of America. Look at the many thousands in this country, who fill this picture drawn by Adam Smith. To be able to look around and say, "this is my own," is a stimulus that induces many a man to toil till he can purchase a little home for his family; and then he has sufficient inducement to continue his toil, for he is improving his own soil. I was just reading of the surprise of an English traveller, while journeying through a western forest, to see a man at work setting an orchard among the stumps. But here is the secret. That man owned the land. He was no tenant of some exacting landlord. He was the lord of the land he was thus improving, himself. It is the true secret of why enterprise and intelligence exist to so great a degree in our new country—the inhabitants are all large or "small holders."

That this country may never, in the agricultural portion of it, be cursed with a population of landlords and tenants, is the earnest wish of your

REVIEWER.

ROUGH NOTES BY THE WAY.—No. 7.

WHILE at Philadelphia, in July last, I improved my first opportunity to visit Mr. Wilkinson's Agricultural School, at Mount Airy, Germantown, seven miles from the above-named city. I regret that my stay could not have been more protracted at that beautiful spot in which the beauties of nature and the result of the skill of art blended form one of the most healthful and delightful places to be found.

The situation now occupied by Mr. W., for the purposes of his school, is that recently the home of James Gowen, Esq., whose eminence as an agriculturist, is, perhaps, unsurpassed in this country. The buildings are substantial, and sufficiently spacious for the accommodation of 60 or 80 pupils. The grounds adjacent to the house are beautifully decorated by numerous varieties of exotic and indigenous fruit and ornamental trees, shrubs, and flowers, with a goodly number of choice and healthy green-house plants, tastefully arranged. The farm, which contains about 70 acres of beautiful land, is in a fine state of cultivation, and the growing and recently-harvested crops, that were about as various as the climate will admit of, reflected most favorably for the skill and industry of Mr. W. and his pupils.

Among other crops, my attention was particularly attracted by the luxuriance as well as the cleanliness of the culture, of about two acres of orange carrots, which Mr. W. informed me he designed for his horses and cows during the winter. They were sown in drills by one of Messrs. Ruggles, Nourse and Mason's drill barrows, about 20 inches apart, and 6 inches asunder in the drills. The planting was done by the pupils, and with few exceptions, (which were rather thin, in consequence of the drill barrow not having been properly regulated, at first,) the drills were as uniform in width, as straight, and as beautifully distributed in rows, as any field crop I ever saw. There was also on the place, a field of about five acres of very thrifty potatoes, in which there was scarcely a weed to be seen. [For an account of this crop and the mode of cultivation, see p. 55 of the current volume.]

Adjacent to the potatoes, was a piece of land, which had been underdrained by Mr. W. for the benefit of his pupils. This was very beautifully tilled, and sown with white Dutch turnips, giving a flattering promise of a great crop. [At p. 316, vol. vii., of the Agriculturist, there will be seen a description of the mode of underdraining there practiced.] The perfectly-reclaimed and dry appearance of the land, as seen in his turnip field, is convincing evidence of the correctness and utility of his method.

By the system practised by Mr. Wilkinson, a large portion of the farm is devoted to grain and roots; still, a large stock of cattle, horses, and swine are kept, by means of the partial-soiling system; lucern and gourd-seed corn, sown broadcast, being the crops chiefly used for that purpose.

An immense amount of manure is made on the

place, by carefully composting that of the stables and pigsty, with the gleanings from the truck and flower gardens, muck and alluvial soils from the swamp, charcoal, gypsum, &c., &c. The gypsum is also freely used in the stables. The compost is applied for the farm crops in a state of partial decomposition, and incorporated with the soil.

I was much pleased with the mode here practised of keeping the farm profit and loss account. This is done by making an accurate survey and map of the farm, with the divisions, location of the buildings, &c., on a scale sufficiently large to admit of the following minutiæ, being intelligibly written in each enclosure, viz:—The number of the lot; the crop grown upon it; when put in; when harvested; the value of, and amount of, the manure applied; the entire expense of cultivation; and the net profit, with references or notes and remarks on the margin. This map is to be copied annually, and thus constitutes a complete farm account, for every year, the economy, convenience, and utility of which is very obvious; besides, these maps will form a most interesting record to transmit to posterity, from generation to generation, and a comparison of these tables, would make very interesting employment for the superanuated farmer.

Mr. Wilkinson, the principal of this establishment, seems well qualified for the station, and evidently feels the great responsibility devolving upon him. By his patient, kind, and sociable intercourse with his pupils, he appears to have secured their full confidence, as well as their warm affection, and while they treat him with due respect, they are apparently without restraint in his presence, and to all appearances are cheerful and happy.

Mr. W. is in the daily habit of assembling with his pupils immediately after dinner, in the lecture room, where they discuss all matters pertaining to the farm, by which, they not only enjoy the advantage of the experience of their preceptor, and each other, but by this means they become accustomed to speaking in public, a desirable accomplishment which few practical farmers possess. The students, also, have the advantage of thorough scientific instruction, as well as elementary knowledge, in connection with the farm course, which is founded upon the only efficient and true system; that is, they participate in every branch of agricultural labor and are taught to use, regulate properly, and keep in order, all the implements, vehicles, and machines of the farm.

That the length of this article may not exclude other important matter, I must leave many interesting things relative to this establishment without comment, and conclude by wishing the fullest success to this and all other similar institutions. I will only add, that I would heartily recommend parents, who have sons to educate, to visit this school, and see for themselves the facilities which students here enjoy for acquiring moral habits, physical strength, and a thorough practical and scientific knowledge of the *foundation of, and keystone to, all other arts.* SAMUEL ALLEN.

New York, February 1st, 1849.

CAUTION.

THE use of lime without manure
Will only make the farmer poor.
From the German.

GRASSES, MEADOWS, AND PASTURES.—No 3.

The Sweet-scented Vernal Grass, (Anthoxanthum odoratum,) Fig. 28, is an early and valuable grass, which exhales that delightful perfume so characteristic of much of the eastern meadow hay. It is also a late as well as an early grass, and luxuriates in a dry, sandy loam. It affords two, and sometimes three crops in a season.

FIG. 28.

Poa alpina, Fig. 29, *Aira cæspitosa*, Fig. 30, *Briza media*, Fig. 31, and the *Agrostis humilis*, and *Agrostis vulgaris*, as well as the *hard and sheep's fescue*, before noticed, are all sweet, pasture grasses, and excellent for lawns. These, and a large variety of other dwarf grasses, abound on our uncultivated uplands, mountains, and woodlands, creeping in through the

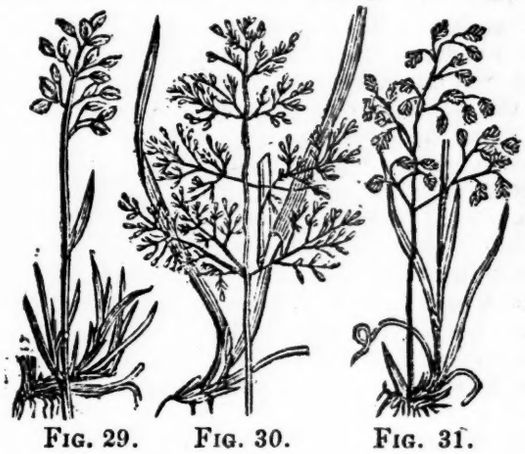

FIG. 29. FIG. 30. FIG. 31.

neglect, rather than the care of the husbandman. They yield a nutritive herbage for the herds and flocks, and an almost perennial verdure to the landscape, equally grateful to the rustic eye, and a cultivated taste.

Ribbon Grass, (Phalaris americana,) is the beautiful striped grass, occasionally used for garden borders. It has been highly recommended for swamps, to which, if transplanted, it is alleged that it will supersede all other grasses, and afford a fine quality of hay, of an appearance quite different from the upland growth. The writer tried several experiments, both with the seed and roots, on a clay marsh, but without success. Its proper pabulum is probably a rich carbonaceous soil, such as is found in an alluvial swamp, or peat bed.

Gama Grass, (Tripsacum dactyloides,) is found growing spontaneously on a naked sand beach in Stratford, Ct., and in other places on our eastern coasts. It has occasionally been much lauded at the north, where it is a coarse, rough grass; and it seems generally, to be little prized at the south. But we have recently, the opinion of some intelligent men in that section, that it is much relished by stock; as they frequently eat it so close to the ground, as soon to extirpate it. We should conclude, therefore, that it is a valuable grass for some sections of the United States, where the soil and locality are suited to it.

Egyptian or Syrian Millet or Guinea Grass, (Sorghum halepense,) known by various other names, is a native of our southern states, in many of its varieties, although it has been imported from abroad. I have seen it growing in profusion on Long Island, Charleston, S. C., and in Southern Mississippi. It grows like a very slender, miniature cornstalk, from four to six feet high, with a strong stem, and large grassy leaf, and bears a stately seed stalk, tufted with flowerets, which, however, so far as they have come within my knowledge, do not bear a fully-ripened seed in this country. That imported from the Mediterranean, grows with great vigor. Its roots are tuberous, large and prolific; and equally with the rich, succulent leaves and stalks, when the latter are young, they are at all times greedily devoured by stock. Dr. Bachman, of South Carolina, considers it a stock-sustaining plant, far superior to any other grown at the south. It is difficult to remove when once embedded in the soil, and the cotton planters look upon its introduction into their cultivated fields, with unmingled apprehension.

[It is to be understood that this is not the *Guinea grass* of Cuba and Jamaica, (*Panicum jumentorium*,) which was introduced into the latter island, in 1774, from the following circumstance:—A cage of African birds had been presented to Chief Justice Ellis, with which was sent a small bag of their native food, the wild grass seed of the coast of Guinea. The birds died and the seeds were carelessly thrown into a hedge, where they quickly grew and spread; and from the eagerness of the cattle to reach it, attention was called to its vegetation, having since become one of the most valuable productions of the West Indies.—Eds.]

Bermuda Grass, (Cynodon dactylon).—This is considered by Mr. Spalding, an experienced planter in Georgia, who examined them both critically, from specimens which he raised together, as the *Doub grass of India*, so much commended by Sir William Jones, and so highly prized by the Bramins. It is by the agriculturists of the south, deemed an invaluable grass, yielding four or five tons per acre on good meadow. Mr. Affleck, of Mississippi, states the yield of three cuttings, at five to six tons per acre on common meadow, that it loses only 50 per cent. of its weight in drying, and is consequently the hardest grass to cut. It is one of the most nutritive grasses known, and is of great value to the river planter. It loves a warm and moist, but not wet soil.

Crab Grass is considered, (unjustly as I think,) a pest by the cotton planters, for equally, perhaps, with the Bermuda, it is a rich and nutritious grass. It comes up after the crops are *laid by*, (received their last plowing and hoeing,) and grows rapidly as the cotton or corn matures and dries; and by the time they are ready to remove from the field, has frequently attained so large a growth, as to afford a crop of hay. Even considered as a fertilizer alone, it is a valuable assistant to the planter. When the corn or cotton is young, the ground requires working to an extent sufficient to keep down this grass, solely with a reference to preserving its porosity—its dew-condensing, dew-absorbing properties. When the crop is sufficiently matured to need no further care, the grass shoots forward rapidly, and absorbs largely from the floating elements of the air.

Winter Grass is known on the low, moist, fertile soils of Mississippi and the adjoining states. It springs up in the autumn, grows all winter, and seeds in the spring. It fattens all animals that feed upon it.

Muskeet Grass, found growing on the plains of Mexico and Texas, is considered one of the best of the indigenous grasses. I have seen it growing on the plantations of Louisiana, where it has been successfully transplanted.

Grama is held in the highest estimation by the Mexicans. It attains a medium height, and is deemed the most nutritious of the natural grasses in our southwestern, frontier prairies, in California, and parts of Mexico. It grows on dry, hard, gravelly soils, on side hills, the swells of the prairies, and the gentle elevations in the valleys. The principal value is found in the numerous seeds, which are retained in the pods with great tenacity, long after they are ripe, serving as a luxurious food for all the graminiverous beasts and fowls of the regions where it is known.

Buffalo Grass is found intermixed with the grama, and seldom grows more than a few inches in height. It forms a thick, soft herbage, on which the traveller walks with ease, and reposes, when weary, with delight. It yields a rich sustenance to countless herds of wild horses and cattle, buffaloes, deer, and antelopes.

Tornillo, or Screw Grass.—This grows in great profusion in the region of the two last grasses; but is most conspicuous on the table lands, and between the rivers and creeks, the tall grass of the lower levels, giving place to it as the surface ascends. It is taller than the buffalo, with broader leaves. It bears a seed stock eight or ten inches high, surrounded by a spiral-shaped pod, an inch long and one fourth of an inch in diameter, which contains ten or twelve roundish, flattened seeds. The herbage is not relished by animals, but the ripened seeds yield a food of great richness, on which innumerable herds of wild cattle fatten for slaughter. Horses, mules, and most other animals and fowls subsist upon it.

The Prairie Grasses abound in the western prairies, and are of great variety, according to the latitude and circumstances under which they are found. They afford large supplies of nutritive food both as pasturage and hay. They possess different merits for stock, but as a general rule, they are coarse when they have reached maturity, and are easily injured by the early frosts of autumn. Some of the leguminosæ, or wild pea vines, which are frequently found among them, yield the richest herbage. We are not aware that any of these grasses have been cultivated with success.

Pony Grass may be mentioned, as one of the best of the winter grasses in our western states. It grows in close, thick, elevated tufts, and continues green all winter. It is easily detected under the snow by animals, from the little hommocks which every where indent its surface.

Wild Rice, which lines the still, shallow waters of the streams and small inland lakes of many of the western states, affords a palatable forage when green, or if early cut and dried; and the grain,

which is produced in great profusion, is an exhaustless store to the Indians, who push into the thickest of it, and bending over the ripe heads, with two or three strokes of the paddle on the dry stalks, rattle the grain into their light canoes. The wild ducks, geese, and swans, which yet frequent those waters, fatten on this grain throughout the fall and winter.

Tussac Grass, (Dactylis cespitosa,) is a luxuriant, salt-marsh grass, growing in large tufts, and is found in perfection on its native soil, in the Falkland Islands, between 51° south, and about 8° east of the straits of Magellan. Captain Ross describes it, as "the gold and glory of those islands. Every animal feeds upon it with avidity, and fattens in a short time. The blades are about six feet long, and from 200 to 300 shoots spring from a single plant. About four inches of the root eats like the mountain cabbage. It loves a rank, wet, pea bog, with the sea spray over it." Governor Hood, of those islands says: "to cultivate the tussac, I would recommend that the seed be sown in patches, just below the surface of the ground, and at distances of about two feet apart, and afterwards weeded out, as it grows very luxuriantly, and to the height of six or seven feet. It should not be grazed, but reaped or cut in bundles. If cut, it quickly shoots up, but is injured by grazing, particularly by pigs, which tear it up to get at the sweet, nutty root."

Arundo Grass (Arundo alopecurus).—Mr. Hooker, from the same island says: "another grass, however, far more abundant and universally distributed over the whole country, scarcely yields in its nutritious qualities to the tussac; I mean the Arundo alopecurus, which covers every peat bog with a dense and rich clothing of green in summer, and a pale, yellow, good hay in the winter season. This hay, though formed by nature without being mown and dried, keeps those cattle which have not access to the former grass in excellent condition. No bog, however rank, seems too bad for this plant to luxuriate in; and as we remarked during our survey of Port William, although the soil on the quartz districts was very unprolific in many good grasses, which flourish on the clay slate, and generally speaking, of the worst description, still the arundo did not appear to feel the change; nor did the cattle fail to eat down large tracts of this pasturage."

I have purposely devoted several pages to the description of such new grasses as are indigenous to this continent, and which, by their superior value in their native localities, would seem to commend themselves to a thorough trial in similar situations elsewhere. There are doubtless, others of great merit, which experiment hereafter, will demonstrate to be of singular benefit to the American farmer. Most of these yet remain to be classified by the botanist; and what is of much more utility, to be thoroughly tested by the crucibles of intelligent chemists and the experiments of enlightened agriculturists, to determine their absolute and relative value for economical purposes. The subject of grasses has been but slightly investigated in this country, in comparison with its immense importance; and for this reason, with few exceptions, we are at a loss for the true comparative value, of the foreign and indigenous grasses, to American husbandry.

As an instance of the want of a well-established character to some of our most generally cultivated grasses, we quote the opinions of Dr. Muhlenburg, of Pa., who has written ably on the subject; and the late John Taylor, a distinguished agriculturist of Virginia, both of whom place the tall oat grass, (*Avena elatior*,) at the head of the grasses; yet, from the investigations made at Woburn, it appears among the poorest in the amount of nutritive matter yielded per acre. Dr. Darlington, also of Pennsylvania, does not mention it, but gives the following, as comprehending "those species which are considered of chief value in our meadows and pastures, naming them in what I consider the order of their excellence: 1. Meadow or green grass (*Poa pratensis*). 2. Timothy (*Phleum pratense*). 3. Orchard grass (*Dactylus glomerata*). 4. Meadow fescue (*Festuca pratensis*). 5. Blue grass (*Poa compressa*). 6. Ray grass (*Lolium perenne*). 7. Red top (*Agrostis vulgaris*). 8. Sweet-scented vernal grass (*Anthoxanthum odoratum*)."

The *Sweet-Scented, Soft Grass*, or *Holy Grass*, (*Holcus odoratus*,) according to the Woburn table, is next to the tall fescue and Timothy in point of nutritive matter to the acre, when cut in seed, and it is placed as far in advance of all others, in the value of its aftermath; yet scarcely any other authority mentions it with commendation.—*Allen's American Farm Book.*

AGRICULTURAL TOUR SOUTH AND WEST.—No. 4.

Between Woodville and Bayou Sarah, 24 miles, is a railroad that would be of vast benefit to the cotton planters, if the company had learned the secret connected with low freights. Short crops and low prices of cotton, combined with the fact of several planters in the hill lands between Woodville and Bayou Sarah, having been very successful in the cultivation of cane the past season or two, is creating considerable excitement about making sugar in a region that it would have been considered only a few years since, madness to talk about. It is said that Dr. Wilcox, eight miles from Bayou Sarah, makes this year 400 hhds. of sugar upon a place that has not lately yielded over 150 bales of cotton; and that his neighbor, Mr. Fort, is making two hogsheads to the acre from land that only afforded half a bale. [It is to be remembered that a hhd. of sugar is 1,000 lbs. and a bale of cotton is 400 lbs.] It is also known that Mr. Ruffin Barrow, Dr. Perkins, and others have been successful in making sugar upon hill lands. As not one cotton planter in a hundred is making simple interest upon his investments, it is no wonder that every successful effort to cultivate sugar cane further north, and away from the immediate alluvion of the river, where it was long thought it could only be cultivated, should create considerable excitement among the upland cotton planters. And although the present low price of sugar does not offer a golden harvest equal to California "placers," yet it is an ascertained fact that brown sugars, at three cents, produce a better result than cotton at six. And it is very evident that either owing to the seasons or acclimatization, the culture is continually extending

northward, and I have no doubt that most of the cotton plantations below Natchez, will in a few years more afford twice as much sugar in value as they now do cotton. True, the amount of money required to make the change is great—of that hereafter. On the evening I left Woodville, I spent the night upon one of the oldest *American* plantations in this part of Louisiana, owned by General McAustin, an Irishman, but has resided upon this place, Springfield, one mile south of the state line on the road from Woodville to Jackson, La., upwards of forty-five years, and has made a cotton crop every year, though some of the earliest ones were ginned by his own and one negro's fingers, while sitting over a log-cabin fire of a winter evening. But, in 1809, he sold a crop of considerable size at 32½ cents a pound! This "gave me a lift," remarked the General, "by which I was enabled to begin to go ahead." He is now a hale old man of 77, was a great friend of General Jackson, but a small one to some of those that have since pretended to follow the steps of that "illustrious predecessor." His reminiscences of the early settlement of this country are highly interesting, but space will not permit me to insert them here. Speaking of coco grass, he says he has seen it grow up through a pile of cotton seed, several feet thick, that was purposely put upon a patch of it to smother it. He says that "old field, black seed grass," will crowd out Bermuda grass in two or three years. The land here, though still hilly, is far less so than that I have passed over, and much better watered with springs and creeks.

General M. says he has kept sheep many years, and that they do well. The wool, originally fine, continues the same, only shorter. He has some very good horses of his own raising; having in his younger days been considerably engaged in rearing—he loves a good horse. He cultivates at the home plantation, (having two others,) about 1,000 acres, with sixty hands, and averages 300 bales of cotton—5 bales to the hand, which averages perhaps $20 the bale. This is certainly not a very profitable income upon the value of land, stock, machinery, slaves, &c., particularly, as upon a large, old plantation like this, not more than one half of the negroes are ever counted as field hands, and estimating the plantation at the very low figure of $50,000 and one half of the proceeds of the crop is at once taken up for interest at 6 per cent. Then there is the wages of one or more overseers; a large bill for new implements, bagging, rope, &c., and half a pound of pork to fill every negro's mouth, every day he lives, besides the immense clothing bill and family expenses to be paid out of the proceeds of the annual crops. It may be argued that while cotton is so low, at least, the full supply of meat ought to be raised on the place. So it had if it can. But with all the studied economy and forethought of such men as Dr. Philips, it cannot always be done, and with men of far less calculation, the matter presents a host of difficulties unknown to northern farmers. "Well, if you can't raise pork, why not feed your negroes on beef," exclaims the northerner. Simply because it would raise a revolt, sooner than all the whip lashes ever braided in Massachusetts. Fat pork and corn bread is the natural aliment of a negro. Deprive him of these and he is miserable. Give him his regular allowance, (3½ lbs. clear pork, and 1½ pecks corn meal per week,) and the negro enjoys more of "heaven on earth," than falls to the lot of any other class of human beings within my knowledge.

On the day I left General McAustin's, I dined with Wm. G. Johnson, whom many of my readers will recognize as an old and very intelligent cotton planter. Finding he could not continue to clothe and feed a large number of negroes, many of whom had grown old with their master, he has abandoned cotton altogether and suffered a large and once fine plantation to fall to decay, and wear the weeds of desolation; using it only as a stock farm, and home for himself and old servants, while he has put all the able hands upon a sugar plantation, owned in company with his son-in-law, Wm. B. Walker, at Bayou Mauchac. There are several other abandoned plantations in Mr. Johnson's neighborhood, where buildings and fences are tumbling in ruins, and beautiful gardens grown up in briars and bushes, and large fields covered with broom sedge, the whole making a scene of desolation that is painful to pass by. And these things are not only here—they are more or less to be seen all through the cotton region. For the truth is, cotton cannot be grown at the present prices. Mr. Johnson thinks that sugar can be made at 3 cts. a pound better than cotton at six; and that anywhere within the limits of sugar growing, the same hands and lands, will average, one year with another, one hogshead of sugar for every bale of cotton.

A few miles south of Jackson, on the Baton-Rouge road, I crossed the Clinton and Port-Hudson Railroad, in a state of dilapidation. Why is it that no enterprise of this kind succeeds in this region? Dining with General Carter, I learned that his brother, on the adjoining place, made this year from four and a quarter acres of cane, (nearly one fourth of an acre of which was waste ground, in consequence of a pond,) seventeen and two thirds hogsheads of sugar. The character of the soil is clayey upland, rather flat; original growth, oak, magnolia, gum, poplar, &c., and has been cleared and in cotton about twelve years, this being the first crop of cane. Another neighbor made 42 hhds. from 12½ acres—certainly very encouraging to hill-land planters, and I hope the same success may continue to attend them. Though it is contended by many that these old cotton plantations, after some of the first crops of cane, will "run out." But I cannot believe that a soil almost bottomless, if properly cultivated, can ever fail. And I will show in some of my subsequent letters, by indisputable facts, that the subsoil plow is all that is needed to renovate land that has "run out," anywhere upon this vast and inexhaustible bed of alluvion.

Immediately after leaving General Carter's, we enter "the plains," a very level tract of land some dozen miles across, of a whitish clay, with frequent openings, called "prairie," however unlike they look to those I live upon, and judging from the appearance of the few scattered settlements along the road, the land affords a poor return for the cultivation bestowed upon it. Though I have no doubt that all this great uncultivated tract, lying along this road, much of it still in heavy forest, mostly

beech, with magnolia, oak, poplar, &c., will some day be found to be most valuable land, when cleared and well underdrained; for water is the great detriment to cultivation on much of the soil of this region. I passed the night with Dr. Scott, who lives on the river bank, six miles above Baton Rouge. He is a gentleman of education and intelligence, but who has got such an inveterate habit of looking on the "black side" of everything, that he sees nothing but darkness in the path ahead. He says that it is idle for hill planters to think of going into the sugar business; for most of the sugar planters of the state are bound to fail. He has 40 acres of cane which he wishes was out of the ground again. He won't build a sugar house because he would have to become tributary to the north, and the state now imports more than she sells, and unless she will go to manufacturing right soon, and in good earnest, she must become bankrupt, &c. He complains that sugar makers are ruining the country by their enormous consumption of wood; yet, the sale of wood is the principal business of this man; and at a price, ($2.50 a cord,) that he would not realize if it were not for the great consumption of the sugar works.

December 14th, I visited Baton Rouge, and almost as a matter of course, General Taylor, whom, if I had found on a farm, instead of in a garrison, I should have thought a plain and very sensible old farmer, who loved to talk about the business of cultivation better than anything else. From the conversation I had with him, I think that he is aware that he has got a weedy row to hoe, but that he will dig it through or die, and woe to the weeds that come in the way of his old hoe. I also made the acquaintance of T. B. Thorpe, from whom I received letters of introduction to several of the editorial family of New Orleans, that were afterwards of great service to me. I cannot omit here the kind remembrance of Mrs. Thorpe, than whom I have not met with a more pleasant acquaintance on my list. While in company with Mrs. Thorpe, the conversation turned upon an article lately published, in regard to a want of proper secretiveness in the Muscovy ducks about their nests. She says that all her experience goes to the contrary; that her ducks have always been unusually secretive, and thinks that is their general character in this region. I also partook of the hospitalities and kind offices of John R. Dufrocq, editor of the Baton-Rouge Gazette, Mayor of the city, &c., &c., whom his thousands of Michigan and Canada friends will delight to hear is the same highminded nature's nobleman he ever was. By his politeness and attention, and in his company, I visited the penitentiary, now being transferred by the present contractors, McHatton, Pratt & Co., into a great cotton and woollen manufactory. There are at present about 140 convicts, who are well fed, clothed, and lodged in solitary cells. They are now making 900 yards of an excellent quality of stout cotton, well worthy the attention of planters. There are a few shoemakers, tailors, and blacksmiths, besides carrying on a great amount of brick making; for the individuals having the contract for the splendid state house now building here. They get $12.50 a thousand for the bricks laid in the wall. I saw in the penitentiary, sixteen of the best mules I ever saw together. One was seventeen hands high and well formed; though not so remarkably so as one not quite so large, and valued at $250—none of them being worth less than $150—the present value of the plantation mules being now from $80 to $125. Baton Rouge may be said to be the northern limit of oranges, and I saw here several trees twenty or twenty-five feet high, loaded with fruit, the most beautiful of all others, that grow upon trees. Here, at this date, many garden vegetables are in quite perfection, and roses fill the air with fragrant sweets. Mr. Dufrocq informs me that the misletoe is killing the live oaks, in this town; the streets of which are ornamented with a great many of these most beautiful of all the family of oaks. Query—is that the cause? This town, now, or rather in 1850, is to be the state capital, contains between 2,000 or 3,000 inhabitants, on a very handsome site, fifty feet above high water, although just at present the water well mixed with loamy earth is pretty high all over town. The state house is to be one of the finest on the Mississippi. It stands fronting the river as well as three streets. It will cost, when complete, nearly half a million of dollars.

Immediately on leaving the town of Baton Rouge, commences the great levee of the Mississippi, a dam of earth extending to the mouth, and varying from one to ten feet high, by which man hath said to the mighty stream, "thus far shalt thou flow and no farther;" and by which only can the great sugar plantations of Louisiana be cultivated. But, before entering upon these, let us have another month's rest; for I have a great deal to write, some of which, I have every confidence in my ability to make interesting to my readers. That the present chapter is not more so, I am sure that they will excuse me when I tell them that it was written during my confinement to my room with an attack of the epidemic of the present winter, that has spread mourning along the banks of the Mississippi, and had it not been for the kindness of one of whom I shall speak by-and-by in commensurate terms, I should not now have been in a condition to say that I still remain your old friend

SOLON ROBINSON.

Point Celeste, below New Orleans, Jan. 12th, 1849.

ROTATION OF CROPS IN MASSACHUSETTS.—At a late agricultural meeting in Boston, Hon. Mr. Brooks, of Princeton, stated that, from a series of experiments made by him, he had been led to adopt the following system in the rotation of crops:—1st, potatoes; 2d, Indian corn; 3d, wheat; 4th, grass, eight years. His potatoes averaged 225 bushels per acre; his corn, 45 bushels; his wheat, 20 bushels: and his hay a ton and a half per acre.

It will be seen at p. 82, of our sixth volume, by a communication from John Brown, 2nd, of Long Island, Lake Winnipissiogee, that, by a similar rotation, he raised 300 bushels of potatoes per acre; 136 bushels of shelled corn; and from 30 to 35 bushels of wheat.

SOLUTION, among chemists, is the complete union of a solid substance with a fluid so that the solid entirely melts and disappears, as common salt dissolved in water.

COL. RANDALL'S MERINO SHEEP.

We have the pleasure of giving our readers the following cuts of a Merino buck and ewe, bred and owned by Col. H. S. Randall, of Cortland village, New York. He has devoted much attention to the rearing of fine sheep for several years past, and these portraits are considered fair specimens of his flock. Col. R's. sheep are said to be of good medium size, compact and fine of form, and of great weight for their inches—characteristics, we are free to confess, we generally prefer in all animals. Another thing, his flock is not so throaty as Merinos were formerly bred, as he considers throatiness objectionable. He originally had a few sheep with more or less black gum on the ends of their wool, but his good sense and fine taste soon convinced him that this should be avoided, and he immediately discarded all such from his premises. The wool, his flock now yields, though oily, (as all choice Merino should be,) is destitute of concrete gum, either within or on the extremities of the fleece; and yet it is sufficiently dense to shed the rain without the aid of gum. The wool opens white and lustrous, on a mellow, rose-colored skin, and is of the highest quality known in market as Merino. The fleeces, also, are quite even, and *entirely destitute of hair* on the thighs and dewlap. Some consider these small matters, but we think them of great importance, and we trust that the good example of Col. Randall will be followed by other flock masters in their breeding. We understand his sheep are pure descendants of the early importations by Messrs. Humphrey, Jarvis, Crowningshield, &c.. For pedigrees and a more particular account of the origin of this fine flock, see volume third of the Agriculturist, p. 367.

The buck, Fig. 32, our readers will observe, has a slightly lank appearance; but it must be recollected that it is a portrait of a *young* animal, which, as it grows older will become heavier and more compact in form. The ewe, Fig. 33, is very fine, and breeders will do well to take her portrait into consideration in giving shape to their flocks. Col. R. informs us that she sheared 7 lbs. 10 oz. of wool, well washed on her back, in a clean running stream.

Dr. Emmons, while editor of the American Quarterly Journal of Agriculture and Science, gave a cut of the measurements of samples of wool taken from various flocks. That from a prize ram of Col. Randall, the fleece of which weighed 10 lbs. well washed, appears to rank favorably for fineness with much of our country-bred Saxon wool.

We now quote from Col. Randall's excellent work on "Sheep Husbandry in the South," which we briefly noticed at page 100 of our March number:—

"I have bred Merino sheep for a number of years, and latterly in considerable numbers; and in no case have my grown sheep averaged less than 5 lbs. of well-washed wool per annum. * * * In 1846, I sold for 35 cents per pound; in 1845, for 33⅓ cents; in 1844, for 48 cents; in 1843, for 33⅓ cents; in 1842, for 36 cents, and so on. To give more precise data, I select the following statement of the products of a flock on which I drew the first premium offered by the New-York State Agricultural Society, for 'the best managed flock of sheep,' in 1844:—

The Property of Col. H. S. Randall, Cortland Village, N. Y.

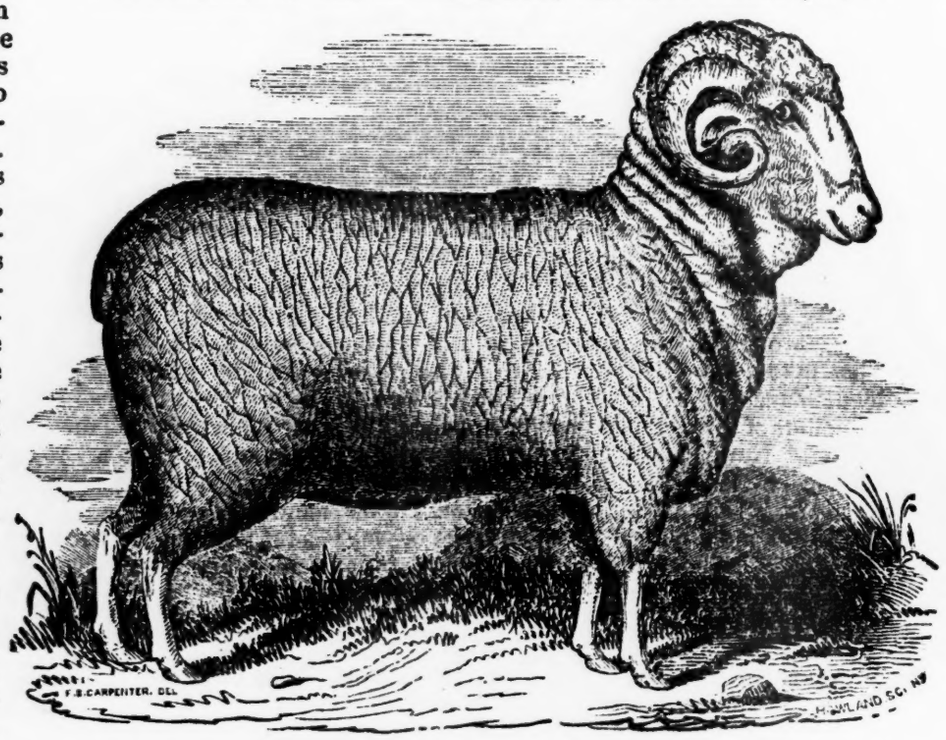

Fig. 32. Merino Ram, Defiance.

'In the winter of 1843-4, I wintered in a separate flock fifty-one ewes over one year old, two ewe lambs, two rams, one of them one, and one of them two years old. Of the ewes over one year old, twenty-eight were full-blood Merinos; twenty-three were half-blood Merinos and half-blood Southdowns; the two ewe lambs were three-fourth-blood Merino and one-fourth-blood Southdown; and the two rams were full-blood Merinos. The flock were kept as follows through the winter:—They were fed hay morning and night, and were, as a general rule, required to eat it up clean. At noon, the flock were daily fed three bundles of oats and barley, (which had grown mixed, say three parts oats and one part barley,) until the 25th of December—after which they received four bundles of oats. The grain was light and shrunken. They received no

hay at noon during the winter, and usually consumed all the straw of the grain fed them. They had a good shelter, and access to pure water at all times. From this flock, I raised fifty-three lambs. The full-blood Merinos, including two rams, and the two three-fourth-blood lambs, (in all thirty-two,) sheared one hundred and eighty-six pounds and four ounces of washed wool, which I sold at forty-eight cents per pound. Four of the full-bloods had two years' fleeces on. The half-blood Merinos and half-blood Southdowns, (twenty-three,) sheared eight and one half pounds of washed wool, seventy-one pounds of which I sold at thirty-eight cents per pound. During the summer of 1844, the flock were kept in good ordinary pasture, and salted once a week.'—[Transactions of N. Y. State Agricultural Society, 1844.]

"Thus, the Merino fleeces averaged 5 lbs. $13\frac{3}{8}$ oz. and sold for \$ $2.79\frac{3}{8}$ each; and the grades between Merino and Southdown averaged 3 lbs. 8 oz.

THE PROPERTY OF COL. H. S. RANDALL, CORTLAND VILLAGE, N. Y.

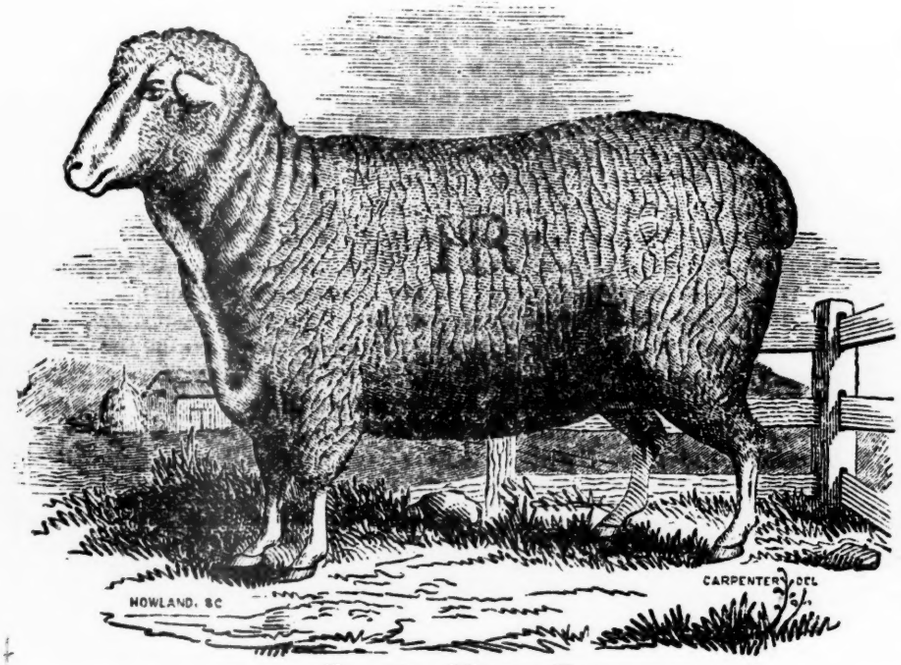

FIG. 33. MERINO EWE.

to the fleece, and sold for \$1.33 each. It will be observed that four of the full-bloods, (ewes,) had two-year fleeces on. A two-year fleece will not weigh so much as two single year's fleeces from the same sheep. On the average, it will weigh about three quarters as much. On the other hand, the lot included two three-quarter-blood lamb fleeces, which would fall below the average weight of the others, and a portion of the flock were yearlings and two-year olds. The Merino never attains its maximum weight of fleece before three years old, and ordinarily not until four, and therefore the aggregate weight of wool of the 32 sheep, given above, does not, to say the least of it, give too favorable a view of the product of sheep of this quality. This is proved by the fact that my entire flock of full-bloods sheared about three twentieths of an ounce over six pounds each, the succeeding year."

QUERIES IN REGARD TO THE WATER RAM.

THE public are desirous of more authentic information on the comparative quantities of water raised and wasted in the use of the water ram. The principle of its action is one of the most simple in the science of hydraulics; yet, in its application, it is subject to so much variation from friction and resistance, owing to the relative sizes, lengths, and position of the pipes, as well as from other circumstances connected with the machine, that it is impossible to state, in many cases propounded us, how much water out of a given quantity may be wasted or how much saved. We would therefore, respectfully solicit from any and all of our intelligent readers, who have these water rams in use, answers to the following questions, in order to construct a reliable table for public reference, as well as for our own use:—

1. What is the perpendicular height of your water fall, in feet, above the bottom of the sole of the ram?

2. Out of a given quantity of water used per minute, how many wine gallons are wasted and how many elevated or saved?

3. How many feet higher than the water above the dam is the water raised?

4. What distance, in feet or rods, is the water conveyed by pipes from the ram to your house, or place of discharge?

5. Are there any short turns or angles in the pipe, and how many, between the ram and your house?

6. What is the No. of the ram, and the name of the inventor or manufacturer?

7. What is the length, in feet, and the inner diameter, in inches, of the drive or supply pipe?

8. How many feet or inches below the surface of the water above the dam does the drive pipe receive its supply?

9. What is the inner diameter, in inches, of the pipe conducting the water to your house?

In order to determine the quantity of water wasted and saved, we would reccommend that two observers, one at the house and the other at the ram, by a signal previously agreed upon, commence collecting the water, in one or more vessels, at the same instant, and continue the operation precisely *ten minutes*; then carefully measure the water caught at the ram, as well as that caught at the house, committing the results to paper, on the spot, as soon as measured.

If there are any other circumstances affecting the operation of the machine, or the relative quantities of water raised and wasted, please to let them be accurately noted, as well as any suggestions for their improvements.

MR. ALLEN'S AGRICULTURAL ADDRESS.

We subjoin some extracts from the valuable address of L. F. Allen, Esq., President of the New-York State Agricultural Society, alluded to in our last number. They are important truths, strongly enforced, which we hope our readers will not fail to heed.

In speaking of the slow and hesitating advances of our state legislatures, in aiding our agricultural societies, he says: "In viewing the progress of this great measure through its first feeble efforts at existence, until its final consummation by law, and its rapid advancement since, an acknowledgment of deep gratitude is due to the liberality which has pervaded the ranks of those professions and occupations in our community not agricultural. The most formidable obstacles which the promoters of this institution have met in all their efforts, were either the determined inaction, or direct opposition of the mass of the farmers themselves. I speak this more in sorrow than in anger, that they who were to be most benefitted by its results, should be the slowest in yielding it their support; while those of the learned professions, the mechanics, artisans, and merchants generally, both in and out of the legislature, and throughout the state, gave to our efforts a general and hearty concurrence. The comparatively few practical farmers whose zeal and co-operation would take no denial until success had crowned their efforts, represented, with but few exceptions, an inactive and thankless constituency at home. It is, however, most consolatory to remark, that the practical operations of this, and the county societies, have awakened a spirit of emulation and inquiry among the mass of our farmers, which, although slow in its growth, must ultimately be crowned with the most gratifying results.

"Nor is the inactivity complained of, perhaps, unnatural on the part of the agricultural class. Engaged in a retired and domestic occupation—unused to habits of professional association, of which they have not been taught the necessity, nor felt the stimulating influence, they have neglected to adopt that combined action which distinguishes the other professions, and is the mainspring to their success in the improvement which they so rapidly accomplish. But we are ascertaining that this system of association, in order to advance to any high degree of improvement also, we must effectually practice; for, it is only to the habits of inquiry and examination of whatever subject he may have in hand, that gives success to the master of any occupation whatever. Why is it the fact—and fact it is—that many of the best and most successful farmers in our country are those, who, bred to other pursuits and toiled in them to middle age—and many far beyond it—till, from inclination or necessity, they have embraced agriculture as an occupation, with a determination to succeed? It is because investigation has been the habit of their lives. They do nothing without a good and satisfactory reason for doing it. They bend every faculty of the mind to acquire success in this, as they did in their previous pursuits; and the application of the same intelligence upon the farm, that had there been exerted, produced the same results, although their early education and subsequent labors had kept them in profound ignorance of the simplest rules of practical agriculture. The most gratifying success has been thus accomplished, while he, who has from childhood tilled his paternal acres in obstinate and persevering ignorance of the true principles of his art, although scorning in the pride of his own fancied superiority, the more timid efforts of his thoughtful neighbor, delves on through life, a wretched and unsuccessful farmer, and, in time, leaves the world no better, so far as his own labors were concerned, than he found it; and is finally buried beneath a soil over which he plodded for three score years, and never knew a single part of its composition!

"This, though perhaps an extreme, and certainly not a flattering picture, is still a type of agricultural life, in its way, existing in every one of the United States. In what profession throughout the length and breadth of our land, is there so little progress—nay, such determined opposition to progress, as in the ranks of agriculture? I would not assert that numerous eminent examples of improvement have not existed among those of purely agricultural occupation. But they are rare as compared with men of other pursuits, when applied with all their research and intelligence, to agriculture alone.

"And it may well be inquired, why is this so? Agriculture occupies four fifths of the laboring population of the country. From the agricultural ranks have sprung many of the most illustrious names, whose services have adorned and honored their country. From its ranks, too, have, perhaps, a majority of the most successful among those engaged in the various other pursuits and occupations of life, arisen. In short, there can be no class of our population which affords so sure a basis on which to rely for an infusion into all other pursuits to the durable prosperity of a state, as the agricultural. Such is the gratifying truth; and it is to the health-giving influences of the soil itself—the free, wild air of heaven that he breathes—cheerful exercise and occupation—contentment—and the full, unrestrained enjoyment of man's first estate, bestowed by God himself, that thus constitutes in him who tills the soil, the full development of his faculties in all the admirable proportions of body and of mind, that his Creator intended. Notwithstanding all this, the question still recurs, and may be variously answered. The very ease and contentment of condition in the farmer, is one probable cause of his inactivity in improvement. The quietude of his avocations prevents that constant attrition of mind inseparable from the bustling activity of most other pursuits; and the certainty with which the soil yields its annual tribute to his labor, dispels that spirit of investigation common to classes, the result of whose labors is contingent or uncertain. Nor yet is the farmer an ignorant or a slothful man. In the great responsibilities of life—in domestic duty—in love of country—in the orderly support of the institutions of the land—in stern watchfulness over the acts of those he has placed in authority, and in that exalted patriotism which is ever ready for the heaviest sacrifice to the benefit of his race, he, as a class, stands without a rival. And yet, possessed of all these qualities, and enjoying all

these advantages, the absence of the spirit of association, leaves him, in effect, the least benefitted at the hands of those he elects to legislate for him, of all others.

"Who invents, improves, and perfects the plow, and all the nameless implements which alleviate his toil and accelerate his labor? Who analyzes his soils, instructs him their various qualities, and teaches him how to mix and manure them for the most profitable cultivation? The mechanic—the chemist. Who, ascertaining that his seeds are imperfect and unprofitable, searches foreign lands for new or better ones, and introduces them to his notice? The commercial adventurer, or the travelled man of inquiry and observation. Who, on comparing the inferior domestic animals which he propagates, and in whose growth and fattening, he loses half his toil, and the food they consume, sends abroad, regardless of expense, and introduces the best breeds of horses, cattle, sheep, and swine for his benefit? In nine cases out of ten, these labors and benefactions—and their name is legion—are performed by those whose occupations have been chiefly in other channels, and whose agricultural tastes have led them into the spirit of improving it. And in how many examples have we witnessed the apathy, if not determined opposition, with which the farmer proper—or, at least, he who claimed to be one—has set his face like flint against their adoption, even after their superiority had been demonstrated beyond a question!

"So, too, with the farmers' education. They have been content that the resources and the bounty of the state, should be lavished upon the higher seats of learning, where the more aspiring of our youth should receive their benefits, not caring even to inquire whether such youth should again return among them to reflect back the knowledge thus acquired. They have failed to demand from the common treasure of the state, those necessary institutions which shall promote their own particular calling, and which every other pursuit and profession in the land has been most active to accomplish. In all this, the latter have progressed with railway speed; while the farming interest has stood still with folded arms, and done comparatively nothing; and what good has been forced upon it by others, even regarded with suspicion. It is not because we, as farmers, compared with others, are either ignorant or stupid. We only neglect to assert our rights and appropriate the share to which we are entitled in the common patronage of the state, to the benefit of our own professions. It is for us to ask—to will—to do it. We hold the power of the state by our numbers. We can control the halls of legislation. We can so direct the laws, that we may share equal advantages in our institutions with others. We desire nothing exclusively to our own advantage; but we do deserve an equal participation in those institutions established for the common benefit of all."

Again: "The farming interest either stands back from your halls of legislation abashed, although nominally represented there by its members; or, if plucking a momentary courage, by the congregation of its numbers, on an occasion like the present, it literally shrinks away, either ashamed to ask its rights; or, if asking, couched in such a subdued tone of humility, that the legislature scarce believe you in earnest. This, gentlemen, is your attitude before the temporary power which you create to govern you! Contrast it with the conduct of those who seek a different kind of favor at its hands. Watch the thousands of applicants for corporate and exclusive privileges, and state patronage, who have, in times past, beseiged your halls of legislation. With what confidence they approach, and lay siege, to the law-making power; and how, like 'sturdy beggars,' they persevere, till, right or wrong, their importunities are granted."

Again, he says, in relation to capital and agriculture: "There is another great and responsible class among us, who have an abiding interest in the exaltation of our agriculture. I speak of the wealthy classes distributed throughout our cities, towns, and villages. Owing to the free and happy institutions we enjoy, well-directed industry, coupled with perseverance and economy, in most branches of business, is tolerably sure to succeed. But, with the success of the parent, and his consequent devotion to the labors of his office, or his counting room, that necessary vigilance and watchfulness over the proper education and employment of his child, is too often neglected. Honestly feeling the strength of his own self-reliance, he trusts that the son may follow in his own laborious and successful course. But a few years only pass, and that son has arrived at manhood, vitiated, perhaps, by adverse associations, or, if still within the path of safety, unfitted by education, or the false estimate of his position in life, to succeed in the beaten track of parental example. In a great majority of cases, capital, toilfully gathered, and safely invested, is squandered, or lost in business adventure, by the misapplication of the son, while the hopeful parent had never considered, that when he had furnished the means, he could not regulate the brains to control it; and after, perhaps, repeated trials, he withdraws him from business altogether, an unsuccessful and disappointed man; and the parent himself, if he escape the ruin of the son, is at a loss to know how he shall provide for his decent employment, or witness the wasting of his own gains, during lifetime, in an unprofitable support; for, in this country, thank God, a man must do something to make him respectable. And yet the well-meaning and laborious parent is scarcely to blame. He has looked abroad among the pursuits of the world, and finds none more generally successful, than the one he himself has occupied. But risen, perchance, from comparative poverty himself, he cannot realize that the strong incentive for exertion, which existed in his own case, is absent in the son, and, therefore, that they each look out upon the world from widely different premises.

"Nor, during all this probation of anxiety and solicitude, has it ever occurred to the father, that agriculture held out the safest mode of investment for a portion of his gains; and, if not the most rapid in accumulation of worldly goods, it was, at least, the surest pursuit for his children, in the absence of that successful tact which he himself possessed for professional, mercantile, or mechanical life. But he has, on the other hand, imbibed

the popular and mistaken notions of the day on that subject. He might, like others who fancied they had some agricultural taste, have had his own country house and farm, got up at great expense; and been pestered with worthless servants, and dishonest managers, who only pillaged and worried him; and after a brief and unsatisfactory trial, abandoned it in disgust, like hundreds of his friends and neighbors, never dreaming that his farming got on quite as well as his law or his trade would have done, with the same amount of his own personal attention! That, and the drudgery of the ordinary farmer, who tilled his own scanty acres in his immediate neighborhood, and whose association, as ignorant and degrading, he had scorned, were the only experience he had known, on which to make up his opinions; and, as a matter of course, he only knew agriculture to condemn it.

"But, had agriculture her proper institutions, where his children could have been taught its necessary education and practice, and exerted its proper influence among the pursuits of the day, how readily would he have embraced the advantages it offered to his family, and eagerly bestowed the best talents of his sons to its rewards! Thus prepared to enjoy it, how many thousands of men, rich in the acquirement of proper knowledge, and fortified in the possession of wholesome estates, would be shining examples of thrift and improvement in our midst! Ample domains, with broad cultivated fields--spreading pastures, dotted with the lively spectacle of flocks and herds—meadows, waving under the burthen of their luxuriant grasses—and graced with comfortable mansions and bending orchards--and peopled throughout the year with those who really felt the dignity of their calling, would spread along your noble rivers, and look abroad from your lofty hills, and line in beautiful relief your canals and thoroughfares—spectacles of home-bred comfort and independence, illustrative of true American character. But, instead of these, are seen the fantastic villas and ephemeral erections, which perk up in ambitious pretension on the elevated knolls of your noble Hudson, the summer abodes of 'fancy farming,' only to be abandoned after a few brief occupations in a round of *ennui-killing* pastimes, and voted—a bore. Such empty essay at agricultural life, usually ends in the squander of what would, if judiciously invested in a useful farm, have been a handsome estate, and is sold, perhaps, under the hammer, at a tithe of its cost, to some man of better sense, who pulls down the bauble, or changes it into an appearance of propriety, and appropriates the soil to useful purposes.

"It may be said that these pictures are of extreme cases. So they are. And, also, that they are subject to many proper exceptions. Very true. But they do exist, and that in far too great numbers; and scarce one of us but knows an instance of their just application. Still there is a great class left—the substantial middle class of our farmers, who require for their sons, destined to follow in their own steady course, that necessary kind of education at present unattainable in our country, and which can only be properly given in agricultural schools. The young farmer painfully feels the want of advantages which these would confer, and the aid of which he vainly seeks elsewhere; and the question, how are we to accomplish the object, remains to be answered."

The question above suggested, is answered by recommending the establishment of agricultural schools and colleges, by liberal grants, properly guarded, from the legislature of our state, which, we hope, they will intelligently consider, wisely organize and establish, and liberally endow, in such manner, and on such principles, as will not fail to secure the long-neglected rights of our farming interests.

SOUTHERN FARMING.

An excellent friend of ours, who is very judiciously and spiritedly improving a fine large estate of his in Georgia, after giving a good account of the fine stock, implements, and seeds we sent him, proceeds to say:—"I have looked through the Agriculturist, but find no mention of the probable benefit or proper application of plaster of Paris to corn. (*a*)

"Would you advise me to soak my seed corn eight hours in saltpetre, then roll in plaster? (*b*)

"I intend to try, this season, fifty acres broken up last September with the large plow, but shall use the cultivator only in tending the crop. I think the deep close plowing among corn adopted in this region, does as much injury as good, as the plow breaks the young roots and prevents their spreading. (*c*)

"Can you give me a plan, and furnish me with all machinery complete for a strong, stationary horse power, to be used for a thresher and also for a corn and cob crusher? (*d*)

"I got no clover from 30 acres sowed last March; and of 40 acres sowed last November, only a small portion looks well now, although it came up finely. I shall try 40 acres with oats this spring, but if it fails, I will then lime and plaster the land where the clover shows above the ground." (*e*)

(*a*) Farmers at the north occasionally apply about a gill of plaster around each hill of corn, at the first or second hoeing, the same as with ashes. Some say that it is very beneficial to their crop, while others contend that it does little or no good. We know, however, that the application of plaster is sooner or later beneficial to the land, and to every kind of crop; as it is consistent with acknowledged principles that it should be so; besides, it is more advantageous to some soils and crops than to others, the light sandy or gravelly soil for instance, and the clover and other leguminous crops. But we think our correspondent would derive more benefit from his corn, from the application of wood ashes, oyster-shell lime, fish, or crushed bones, as these substances contain more of the elements necessary for the growth of corn than plaster. It is affirmed that plaster attracts ammonia and moisture from the atmosphere, as well as from rain water and snow, which would alone make its application to the soil and crop beneficial, even if it contained, (as it does,) no fertilizing property within itself. It also assists to fix the ammonia in

the manure applied to the land, and in this may act advantageously.

(*b*) Take 1 lb. of saltpetre, dissolve it in 6 to 8 quarts of water, and soak the seed from 8 to 24 hours as convenient; then roll in ashes or plaster, and plant. Thus prepared, corn comes up sooner, grows more vigorously, and is not so liable to be attacked by grubs or birds.

(*c*) In this we agree fully with the writer. If the plow be used at all, it should not run more than two inches deep, except when the corn is quite young; but we think it generally safest and best to use the cultivator. It is certainly the most expeditious operation of the two.

(*d*) Taplin's horse power is best for our correspondent, and this may either be stationary or movable. For cut and description, see volume seventh, p. 32 of the Agriculturist; also p. 40 of our catalogue.

(*e*) As a general rule, we think that the southern climate, except in the mountainous regions, is too hot and dry for a profitable growth of northern grasses; nevertheless, they are a subject of *fair experiment*, and we are glad to find our correspondent so persevering in testing them. We hope he will try a few acres with lime and plaster together, also alone. We are of opinion, however, it would be most beneficial to apply them in the months of November, December, January, or February; and the sooner, beginning with November, the better.

In southern grasses, there is room for great improvement; but whether this can be best effected with the foreign or native plants, we will leave to the discussion of southern farmers themselves. It is an interesting and important topic, and we invite communications from them for our columns.

ADULTERATION OF GUANO.

THE merits of guano, as a valuable fertilizer, is conclusively shown in the numerous and gross adulterations and imitations which have been perpetrated with it. As an illustration of many of these frauds, we copy a small part of the evidence given in one of the English courts, in a recent trial at Manchester, to recover money paid for a spurious lot.

"Two tons of the guano were bought at £3, ($15,) per ton, and two tons at 44s. ($11,) per ton. Dr. Robert A. Smith stated, that he had examined the material, and that it contained 70 per cent. of silica, a good deal of alumina, and sand. It was an ordinary sample of sand, and had not a trace of guano in it; nor was it possessed of any fertilizing qualities. On cross-examination, he stated that there was a slight trace of ammonia in the material, but that was the case with all soils. There was not more than one per cent. of excrementitious matter in it, while, in good guano, there was 95 per cent.

"James Batho testified, that he was a manufacturing chemist, and lived opposite the defendant's premises, where they carried on the business of manufacturers of manure. They carted thither refuse from starch works, spent wood from dye works, logwood, and sumach. The defendant, Holahan, was then called, who described himself as 'a guano grinder,' and said that he made guano. A good deal of real guano was mixed with the stuff sold to the plaintiff, and there was also in it the refuse of starch works, which was considered a very fertilizing article. The refuse from starch, was a kind of *mineral* powder; but he did not know what. There was also some spent wood in the mixture, which, he was told, was very fertilizing, too. He had his receipt for making guano from Mr. Evans, of Liverpool, who has made some hundred tons for a merchant there. He put in these articles 'according to fancy.' In answer to the judge, he said, that he used ochre and spent wood to color his 'guano.'

"The learned judge, in delivering judgment, said, that there was no proof that the stuff delivered differed from the sample, and he could not, therefore, assume that it did. Still, if the goods were sold under the name of guano, and what was delivered was not guano, that would alter the case. Guano meant, he conceived, *prima facie*, a foreign substance—the excrements of birds. There was, however, it was true, a kind of compound manure, called 'British guano;' and supposing the stuff delivered to the plaintiff had turned out to be, not foreign guano, but 'British guano,' possessing a fertilizing quality almost equal to that imported, he thought the defendants would not have been liable; but, taking the evidence of Dr. Smith to be correct, that it was merely worthless stuff, and had no fertilizing qualities whatever, it became necessary to inquire whether this was sold under the name of guano, and he was of opinion that it was, and that the plaintiff was, therefore, entitled to recover £10, ($50,) which he gave for the guano. The defendants, whether partners or not, had held themselves out as such in this transaction, and must, therefore, take the consequences. His honor, on the application of Mr. Myers, allowed the costs."

The transactions and receipts for making guano, as above given, may be useful to some of our own countrymen, who are engaged in the very laudable business of manufacturing and vending *genuine guano*, at a less price than it can be imported. We insert this article for the benefit of our unreflecting readers, if we have any such; the more considerate ones will not need it.

FROST AND SNOW AT NEW ORLEANS.

LAST night was one of the most severe that has been experienced here since March, 1833, when all the orange trees on the coast of the Mississippi were killed. The same calamity has undoubtedly befallen them now. Day before yesterday was very mild and pleasant. No fires were needed. In the night, the wind came out north, and yesterday forenoon was clear and cold. I was on board a steamer below Baton Rouge, in the afternoon. About sundown, it commenced a severe storm of of rain, sleet, hail, and snow. It continued at intervals till midnight. In the morning, the decks were coated with ice, and the ground whitened with snow; the trees glittering in the sunshine, and roses and oranges all encased in ice. Oh! what a brilliant scene! But it is a scene of distress. Early corn, beans, peas, tomatoes, peppers, &c., &c., that were growing so finely, are all killed.

Since arriving in the city, I find now, (5 o'clock

in the evening,) snow and ice still upon shaded roofs and yards. It will freeze again to night. This is another calamity to this already overburthened land. The river never was known so high at this season of the year. In several places above us, the levee is broken and towns and plantations are overflowed. New Orleans is about *a little*, as yet, safe from the overflow. Many places have not six inches of levee to spare. SOLON ROBINSON.

New Orleans, Feb. 16th, 1849.

LETTERS FROM CALIFORNIA.—No. 2.

WHEN writing my last of 24 inst., I had hoped to reach the gold regions before again writing; but owing to some business, a slight indisposition will detain me here for a few days longer, and I avail myself of a moment's leisure, to forward another letter by the same messenger who takes the preceding. Although I have seen nothing of the gold country, I have heard much of it. The welkin rings with the sound of gold! gold!! gold!!! Stories are told of the findings, which a few months since would have seemed incredible, but their constant repetition, and from so many sources, would seem to leave me no choice but belief.

So far as I can learn, the gold region, thus far explored, lies nearly between lat. 38° and 45° north. Gold is found on the sandy plains, sometimes in clay, but more frequently in the alluvial soil, in the beds of rivers, in dry ravines, and in the sides of elevated hills, and probably mountains. It exists in small grains, sometimes almost as fine as dust, in minute scales, and in various larger pieces, varying from the size of half-matured, shrunken flaxseed, or grains of rye, to irregularly-diffused masses, spread through quartz or other rocks. It is said that some of these lumps have been found weighing several pounds, but none are properly authenticated as weighing over a few ounces. Many stories of wonderful success, which, at a distance, bear all the impress of established truth, have been found reduced to common-place results when traced to their sources. One of our former associates, who enjoyed the envy of our whole camp, for his reported luck of having found a lump weighing three pounds, soom after became almost an object of commiseration, when it was known that his treasure consisted of a few ounces only, the largest of which weighed less than two, and this was the result of weeks of arduous search, half the time waist deep in water, and exposed to a broiling sun. All this time, too, he was living on flour at a dollar a pound, while the other necessaries of life had to be purchased by him at equally exorbitant rates; and the poor fellow returned to San Francisco, where he has lingered for weeks with the severest attacks of intermittent and other fevers, from which, if he ever recovers, he may carry the effects with him to the grave. Many similar cases have occurred; but others may be guessed from this.

As an offset to these disheartening cases, it may be stated, that no one who has really made an intelligent effort, has failed in his search for gold—that while all have secured some, a few have succeeded in amassing considerable amounts. The veriest loafers in the streets of San Francisco, who, a short time since, had scarcely a shirt to their back, a hat to their head, and shoes to their feet, have returned there with bags of the precious dust, for which a Girard or Astor would have endured as much as it has cost the lucky finders. Many, also, have returned without much apparent exposure or fatigue, and with no evidence of disease. So far as I can learn, the results have been, on the whole, highly favorable; and most of those engaged in gold hunting have been rewarded far beyond the ordinary pursuits of life. Will this success be realized hereafter? I will give you my views on this subject in my next. In the meantime, let me say a word or two by way of *practical remark*, to such as will be flocking here in crowds the coming season, after they have learned the success of those already here.

The contrivances now in use here, for washing gold, are of the rudest kind, consisting often of a cracked bowl, or broken pail, or any earthen or metallic vessel, light enough to carry, yet sufficiently large to hold a moderate quantity of earth containing the precious metal. Much of that washed and thrown away, is still rich in the auriferous dust, but so finely divided as to be considered by the greedy hunters, unworthy their attention. I have no doubt, should some skillful and scientific persons subject the *earth*, already partially harvested by these hasty manipulators, to the test of a well-arranged machine, they would find it far more profitable to follow, rather than precede, these pioneer hunters. Some machine may be so constructed as to pass one hundred times the quantity of dirt that can be washed by hand, and save all the minute particles which are now thrown away. It is impossible to secure all the gold by the contrivances thus far used; and it has been lately conjectured, that much of the heavy *black sand* which has been thrown away, acquires its peculiar gravity from containing a portion of the precious metal. If, to these machines, there be added a plentiful supply of pumps, lead pipe, or leather hose, shovels, picks, quicksilver retorts, the necessary carpenters' and blacksmiths' tools, abundance of proper food, clothing, and protection from the excessive heat by day, and sometimes piercing cold by night, the future gold diggers of California may reasonably hope for a fair return for their labor. * * *

San Joaquin, California Alta, Oct. 8th, 1848.

The above letter was unavoidably crowded out of our last number.—EDS.

DANGER OF USING ARSENIC AS A REMEDY FOR THE SMUT IN WHEAT.—As long ago as the year 1779, Duhamel, in his "Elements of Agriculture," noticed the employment of arsenic, by the farmers of France, for the prevention of smut; and whilst speaking of the dangers arising from its use, for this purpose, expressly states, that partridges, pigeons, &c., from eating poisoned seeds, endanger the lives of persons who use those birds as food. It would also appear that, in the ten years, from 1830 to 1840, there occurred, in France, 235 public accusations of poisoning, out of which number, 110 were against individuals connected with agricultural pursuits; and it was considered that this arose from the readiness with which they were enabled to obtain poisons, especially arsenic, for the purpose of steeping grain.

NEW FORM OF DRAINING TILES PROPOSED.

A CORRESPONDENT in a late number of the "Agricultural Gazette" proposes a new form of tiles for draining clay soils. He thinks that an oval, flattened at the bottom, the best shape, and superior to one that is circular, as requiring no wider room, conducting, in general, as much water, and standing firmer on its base. The upper parts of the drain he would have fit tightly with the sole, or bottom, and pressed firmly into the soil, so as to allow a free passage of the water, without being forced out of its place by filling in the earth. Tapering pipes, so constructed that one end fits into another, he conceives, are good for sandy soils, with the objection that the passage inside of the tube is interrupted by inequalities at the joints; but tapering tiles, lapping one over another, with soles like those denoted in Fig. 34, it is thought would obviate the difficulty, after they are once

FIG. 34. DRAINING TILES.

firmly fixed, by preventing all movements. The ends of the soles are to be made of uniform thickness and in such a manner as to form a close joint when fitted together. The lower edges of the tiles must be so formed as to slide easily under the flanges of the soles, and when laid down, the lap, or joint, should invariably occur at the middle of each sole.

HEREFORD vs. DEVON AND SHORTHORN CATTLE.

MR. KEARY has written an article for the last number of the Journal of the "Royal Agricultural Society," "On The Management of Cattle," which Mr. J. R. Smythies criticises in a late number of the *Mark-Lane Express*, as not only incorrect and incomplete, so far as Herefords are concerned, but, also, as partial to the shorthorns and Devons. He says that Mr. K. has omitted all notice of the *grey* Herefords, "which are considered the oldest breed of any, and by many people the best. From long experience, I am inclined to think they possess more constitution and more quality than the white-faced ones, and generally more size than the mottled-faced ones. Old Mr. Westcor, of Creslow, near Aylesbury, once said to me, at Hereford, 'This is the fiftieth October fair I have attended in this town, without missing one. I graze five hundred oxen every year, and the best beasts I have ever fed were bred by Mr. Tully, of Huntington, and Mr. Skegrue, of Stretton Court, both near Hereford. Mr. Tully's were *greys*, and are still known as the Huntington breed.' Another proof of the author's superficial acquaintance with Hereford cattle is, that in his enumeration of the celebrated breeders of the present day, he makes no mention of Sir Francis Lawley, who has not only decidedly the best herd of Herefords in existence, but has, I believe, the best herd in England, of any breed. He has also omitted the name of Mr. Monkhouse, of Stowe, near Hay, and Mr. Roberts, of Ivington."

Mr. Smythies then speaks of the high prices at which he has sold Herefords, as an estimation of their value with the English public. He then goes on to say: "I have seen Hereford cows milk well, and had one myself which made eleven pounds of butter a week for three months; but it is not an object with a Hereford breeder to have good milkers; they are always light-fleshed, generally narrow in their chests and flat in their sides; whereas, it is the object of a Hereford breeder to get a good ox; having no manufacturing population, no water carriage, and no railroad, dairy produce will not pay in Herefordshire. The farmers, therefore, prefer keeping such cows as have a tendency to turn their chyle to flesh; and as they generally calve in November and December, they have little chance of being good milkers."

He, then, like a true Englishman, offers to settle the respective values of the different breeds of cattle, with something like a wager. Having no favors to show to either party, we here clear the stage at once, and open a fair field to the bellicose gentlemen. Please to listen to Mr. Smythies: "I will show one hundred Hereford beasts, which were the property of Sir Francis Lawley, on the 1st of January, 1849, and the same number which were the property of Mr. Aston, of Lynch Court, on the same day, against an equal number, the property of any two breeders of shorthorns or Devons in any part of Great Britain, on the same day, for one hundred sovereigns. I am willing to leave the decision to the three judges at the last Smithfield show, two of whom are unknown to me, even by sight. I am also ready to place four Hereford calves on the 1st of May next, in the hands of any respectable grazier in the midland counties, against four shorthorns and four Devons; no calf to be more than four months old on that day; the twelve calves to be turned to grass together, to have nothing but grass till the 20th of October following, then to be put into stalls, and to be fed as the grazier thinks proper; but the food to be weighed to each lot, till the following May, when they shall be again turned to grass, and have nothing but what they get there till the 1st of October; then to be again taken into the stalls, and the food weighed as before; the whole to be shown as extra stock at the Smithfield show, at the bazaar, and after the show to be slaughtered, the four beasts that pay the best to be the winners. As shorthorns are stated to come to more early maturity, I give Mr. Keary a great advantage here, as I have fixed two years old for the beasts to be slaughtered at. I think it fair to tell Mr. Keary that the late Duke of Bedford tried this experiment, and the Herefords won it. I propose that the grazier shall have eleven of the beasts for his trouble, and one shall be the property of the winner.

"Now, sir, I hope that this challenge will be accepted, or that we shall hear no more of the great superiority of shorthorns and Devons over Herefords. I think if Mr. Keary will refer to the accounts of the Smithfield club, he will find that the Herefords, in the last ten years, have gained more prizes, and at quite as early an age, as either the shorthorns or the Devons. What I complain of in the publishing of this essay in the journal is, that it will go forth all over Europe, and per-

haps America, as a puff advertisement in favor of shorthorns and Devons, and to the great prejudice of a far better breed than either of them, under the sanction of the society." Now, who shall say that the Herefords are not already triumphant? Where is our friend Sotham, and the other Hereford breeders of America? Have they nothing to offer in this matter? Can you equal the famous Hereford bull, bred by the late Mr. Jefferies? He weighed, not fully fattened, three thousand, nine hundred and twenty pounds! There is a big "bossy calf" for your comfort! But is he any better for being *big?* Please to answer us that, gentlemen. To be sure, you may say that a crab apple is small, with little or no nutrition, and so execrably sour that a pig would squeal if forced to eat it; while a pippin and a belle bonne are large, fair to look at, of delicious flavor, and highly nutritious. Shall we call the native scrubs, then, the "land crabs," and the aristocratic Herefords the "pippins" and "belle bonnes" of cattle?

A WORD TO THE DISAFFECTED.

FEELING a peculiar interest in that portion of the rising generation, who have been reared under the benign influence of agricultural occupations, and being also desirous of eradicating a prevalent error in the opinion of many of the *disaffected*, you will, I presume, readily afford me a brief space in the pages of your journal for expressing a few sentiments, which, I humbly trust, may find a welcome response from a large majority of your younger readers.

The subject on which I purpose a short dissertation is one, which, to me, has frequently occasioned no small astonishment; and though, however strange may by others be regarded, is, nevertheless, one whose lamentable reality demands an immediate counteraction. I particularly allude to an alarming inclination among our country lads and lasses to forsake the comfortable retirement of home, in exchange for the deceitful allurements of city employments. Infatuated with the mistaken idea of speedily enhancing their temporal welfare by engaging in some branch of an already overstocked trade, and "wonderfully tickled" by the vain novelties of the metropolis, they abandon friends, associates, and farms, pressing onward to the city, confidently anticipating the consummation of a thousand longing desires. The evident consequence of such actual multitudes concentrating in all our considerable towns and cities from every direction of the country, must, undoubtedly, be a marked decline both of wages and of labor; and those who have unluckily sacrificed the independent pursuit of agriculture for this entire imaginary benefit, will almost invariably, sooner or later, find that, like Franklin of old, they have paid dear for their whistle. Even under whatever advantageous circumstances they may perchance be situated in their new career, there are innumerable and unforseen moral dangers to which they are unavoidably constantly exposed, and which daily threaten the ruin of the thoughtless and unguarded.

Beset by a host of vicious companions, and beguiled by every variety of temptation, it undoubtedly requires a powerful determination to avert destruction and maintain an unblemished character. In view of perhaps an eventual disappointment *and the uncertain nature of business*, together with the imminent risk of the loss of virtue, peace, and happiness, I am at length constrained to believe that my disaffected young friends relinquish their native lands without the slightest consideration of the effects. Were calm reflection bestowed upon the subject by those who are afflicted with the *town fever*, I am confident that a general re-action would ensue, and the rage for citizenship would gradually subside under the more genial influence of husbandry. Having myself had some experience in the above matters, and deeming it especially fortunate in being able to return to the discharge of the duties of the farm, I should be particularly gratified and rewarded, were my humble pen the means of saving a single youth from the inevitable dangers attendant on city life and occupations.

PLOWBOY.

Greenwood, March 1st, 1849.

We think the views of "Plowboy" may further be elucidated by the following graphic extract from an exceedingly piquant article, by one of our contemporaries, on the delights of living in hotels in this city. He maintains that our people have a passion for gregariousness, and that this passion can only be accounted for on the supposition that our citizens have a horror of privacy:—

"They are willing," says he, "to sacrifice comfort, and, in some degree, personal independence, to gratify ambition for living in public life. No foolish tradition of the 'home of his childhood' haunts the memory of the Gothamite; and no lingering love of locality made sacred by the reminiscences of youth, interferes to check his vagrant habits. No sooner does he enter his teens than all family attractions disappear before his gregarious love—his desire is to live in a world of strangers. He is born in one house, cuts his teeth in another in a distant part of the city, is vaccinated in a third, and wears his first jacket in a fourth, and so on until he commences life for himself, and passes from one boarding house to another every three months. 'The foxes have holes, and the birds of the air have their nests;' but the son of Gotham has but a room of ten feet by eight, which he inhabits. For the peace of home, he has the monotony of the 'reading room.' He prefers the excitement of the bar room to the amenities of domestic life. His happiness is at the mercy of his fifty fellow boarders, who neither know nor care anything about him. His comfort depends upon the chambermaid, and his health on his power of resisting temptation. If he is sick, his pain is soothed by the hurried attentions of an Irish waiter; and if he dies, he performs that final operation amid the noise of slamming doors or strong gongs, and is buried as quickly as possible, to make room for another."

THE VALUE OF BONES AS A MANURE.—It is a fact well established by agricultural chemistry, that a single pound of bones contains as much phosphoric acid, (one of the essential ingredients of wheat,) as one hundred pounds of wheat. Notwithstanding this, it is true that many families in the United States waste more bones than would be required to manure, in this respect, the amount of the wheat crop they consume.

WHEAT GROWING IN TEXAS.

The Red-River country in this state, embracing an extent of about 100 miles in width and about 500 in length, has already proved, with the imperfect experiments which have been made, to be better adapted to the production of wheat, than any other portion of the Union yet known. The product equals in quantity, exceeds in weight and quality, and precedes in time of harvest, by two most important months, all the wheat-producing country of the other states. The average per acre, where wheat has been sown on a field from which corn has been gathered in the same season, the land plowed up, sowed with grain, and dragged in with brush, is twenty bushels, and thirty bushels has been sometimes obtained. What would be the product from a proper and careful cultivation, is as yet a matter of estimate only.

In grinding the wheat into flour, the residuum is a light bran without middling, and the average weight per bushel is about seventy pounds. The harvest is in the month of May, which gives a monopoly of the entire southern market, at a season of the year when the northern supply has become musty and sour, under the influences of a southern climate. What the monopoly of the market is, may be proximately estimated from the fact that New Orleans alone consumes daily 750 barrels; and if that quantity constitutes one tenth of the whole consumption, it gives 750 barrels daily, or 450,000 barrels in sixty days, which, at three dollars per barrel, gives a return of nearly one and a half millions of dollars, for the agricultural product of one hundred thousand acres of land, cultivated by about three thousand laborers.

If the flour of the upper country finds a market in the lower, so will the sugar of the lower country find a market in the upper. We have just discovered that Texas is adapted to the cultivation of sugar, at a time when it seems doubtful whether its product is not already so near equal to the demand, as to render it unprofitable. By increasing the population of the northern portion of the state, and providing facilities of communication, the planter may secure a fair price.—*Houston Telegraph.*

Cost of Manuring an Acre of Corn.—The following estimate of manuring an acre of Indian corn is from a practical farmer, of Hicksville, near Long-Island Railroad, New York:—

14 cubic yards, (20 loads,) of horse dung,	1.62
56 bushels of unleached ashes, - -	7.00
3,630 mossbunkers, (fish,) - - -	4.54
	$13.16

The horse dung he applies in the hill, at the time of planting a handful of ashes is spread around the corn at the first hoeing; one fish is slightly covered with earth midway between the hills and lengthwise of the rows, in June or July. By this course of manuring, an acre will yield from 60 to 80 bushels of shelled corn, and will be in tolerable condition for a crop of rye, buckwheat, or oats, the next season, without any more manure.

HOURS OF SLEEP.

Nature requires five—custom gives seven;
Laziness takes nine—wickedness eleven.

SHEEP SHEARS.

Well-constructed wool shears are of great importance to a careful wool grower, not only in regard to a greater rapidity with which the shearer takes off the fleece, but especially to prevent cutting the sheep; which is injurious to the animal on account of the wounds which are kept inflamed and irritated by the flies and other insects during the best season, and besides there grows, generally, upon these injured parts a coarse kind of wool or hair, which depreciates the value of the fleece; and that of the animal as a breeder. While I was at Breslau, at the before-mentioned meeting of German agriculturists, there were exhibited a new kind of shears, which are now considered the best constructed, and are getting to be generally used there. I made an accurate drawing, full size, of such a pair of shears, from which a skillful mechanic can easily manufacture them.

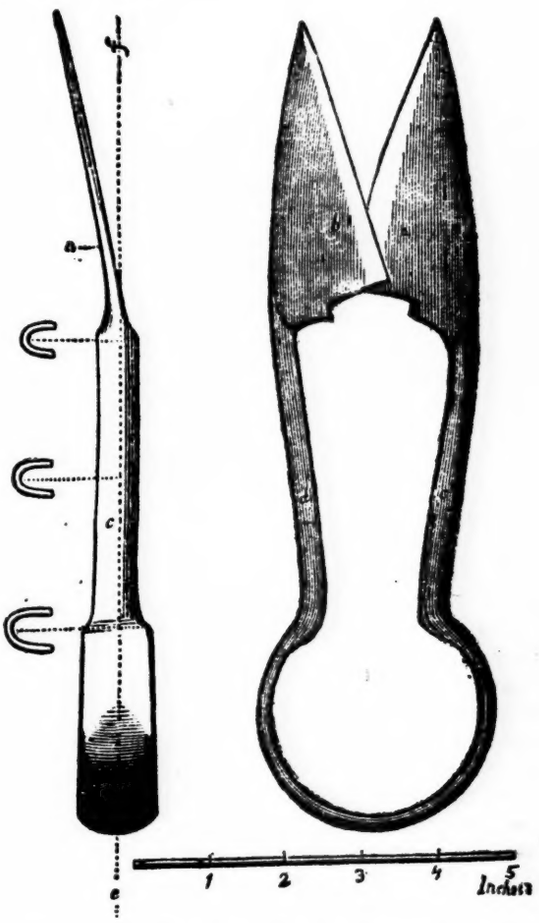

Fig. 35. German Sheep Shears.

The shears *a* and *b*, Fig 35, are shorter than the common wool shears, and facilitate the shearer in cutting clean from the fold without injury to the sheep.

When a straight line is drawn through the spring *e*, and side piece *a* and *b*, the shears deflect from that line at an angle of about 10 degrees. This kind of shears are sold at Berlin, Prussia, Jaegerstrasse, No. 50, from $2.80 to $3.50 per dozen. [We have a similar article on sale, with double springs, imported from Germany, at 50 cents each.] —*C. L. Fleischmann.*

Ladies' Department.

ORIGIN OF SOAP.

Some water and oil
One day had a broil,
As down in a glass they were dropping,
And would not unite,
But continued to fight,
Without any prospect of stopping.

Some pearlash o'erheard,
And quick as a word,
Jumped in the midst of the clashing;
When all three agreed,
And united with speed,
And soap was created for washing.

FEMALE EDUCATION—AMUSEMENTS.

The amount of time foolishly wasted by females is really deplorable—at an age, too, in which their exertions are so much needed. With due respect to your correspondent "Eva," I think single-handed manufacturing in families, though once an indispensable duty, would be poor economy of time and labor in our day, when superior fabrics may be produced by machinery, at much less cost, though, under some circumstances, an occasional buzz of the spinning wheel may be expedient. Our duties, however, are not diminished, but, on the contrary, increased by the improvements of the age in which we live. Woman's sphere is enlarged beyond the limits of the broad rim of the spinning wheel, and is still enlarging. While our duties and responsibilities increase, we are held accountable for much that our grandmothers never dreamed of.

"New occasions teach new duties,
Time makes olden good uncouth,
They must upward still and onward,
Who would keep abreast of truth."

The time is coming when domestic duties are expected to be performed upon scientific principles; and we are bound to employ every means in our power, to make ourselves acquainted with the sciences pertaining to our domestic affairs. A knowledge of chemistry and dietetics, in a cook, is invaluable to a family. Information regarding the laws of health and life, and mental philosophy, is absolutely necessary to the proper rearing of children. The suffering I have seen and experienced for want of knowledge, and the almost incredible advantage gained by the application of a few practical ideas, makes me very desirous for others as well as myself, that we should have "more light."

I think, however, it is not proper that we should always be in performance of the sober duties of life. Nature does not bestow all her care on the sturdy oak and mountain pine, but adorns the landscape with an endless variety of fanciful colors and forms, enlivens the whole with music, and the frolicsome play of animated beings. Nor did she fail to implant in the human mind, faculties harmonizing with the beauty, melody, and gayety of external nature, which find a legitimate sphere of action in ornamental horticulture, vocal and instrumental music, &c. An evening dance of an hour in a family, in which old and young, parents and children may join, is at once conducive to the improvement of social feelings, and furnishes, at the same time, a wholesome relaxation from care, and greatly promotes longevity and health.

Amanda.

KEEPING LEMONS FRESH.

I have been a housekeeper for some years, and never, till lately, have I been able to keep lemons fresh and juicy for any length of time. But with all my care—now in this closet—now in that—now wrapped in paper—now packed in bran—now in a cool place, and now in a dry one, they would dry up and become hard as wood. Of late, however, I have preserved them *perfectly fresh*, three months in summer, by placing them in a closely-covered jar, or pot, kept in the ice house.

Each lemon is wrapped up in paper, (perhaps they would do as well without,) but opened and wiped once in ten or twelve days, then covered again with dry paper, and put back into the jar, or earthen vessel, on the ice. Mother Hubbard.

Otsego Co., N. Y., Feb. 24th, 1849.

Antidote to Poison.—A correspondent of the London Literary Gazette, alluding to the numerous cases of deaths from accidental poisoning, and particularly the melancholy fate of the late Mr. Owen, adds:—I may venture to affirm, there is scarce even a cottage in this country that does not contain an invaluable, certain, and immediate remedy for such events; nothing more than a dessert spoonful of made mustard mixed in a tumbler glass of warm water, and drank immediately. It acts as an instantaneous emetic, is always ready, and may be used with safety in any case where one is required. By making this simple antidote known, you may be the means of saving many a fellow-creature from an untimely end.

Turnip Salad.—The tender tops of turnips, that have sprouted in the cellar or vegetable heap, make a delicate and wholesome salad, particularly at a season when the variety of fine lettuce has not come. They may be dressed like any other salad, or eaten dipped in salt, as celery. They are excellent in any way; and your only regret will be, that there is not likely to be as many messes as you would wish for.

Mustard Plasters.—When a mustard plaster is to be applied, there should always be a piece of clean muslin or gauze placed between it and the skin, unless the contrary is expressly ordered by a physician. The mustard acts quite as powerfully, and the whole can be removed more quickly, and without the disagreeable effects of dropping it about.

How to Remove Dust or Lint from Velvet or Woollen Clothes.—Dust or lint may readily be removed from velvet or woollen cloth by wiping it, while dry, with a piece of crape, without reference to color.

How to Remove Paint from Woollen Garments.—If you accidentally besmear your clothes with undried paint, it may easily be removed by rubbing with a piece of woollen cloth, or another part of the garment soiled, without harm.

Boys' Department.

AGRICULTURAL CHEMISTRY.—No. 12.

In my last letter, I gave you a description of the most important organs belonging to plants, explained, their texture and functions, described the flow of the sap, and told you that, in its descent, (after being submitted in the leaves to the action of the air,) it was fitted for the production of the various portions belonging to the vegetable growth. Let us now examine the vegetable fabric more closely, and take a view of those compounds called proximate principles. In speaking of the constituents of plants, the terms *proximate* and *ultimate*, are frequently used by writers on this subject—the former denoting their compound, the latter their elementary constituents. Every proximate principle must, therefore, be composed of two or more ultimate principles. There are a great number of compound substances found in different plants, and almost every species containing one or more, which is not found in any other, though but a few of these are of much consequence to the agriculturist. The following group of twelve, which I will describe separately, comprises the most common and interesting among them:—Sugar, starch, gum, woody fibre, gluten, vegetable albumen, diastase, and acetic, tartaric, oxalic, citric, and malic acids.

Now, if a person should tell you that he could take three ingredients, and from them form a number of compounds, differing as widely from one another as sugar, starch, and woody fibre, you would be likely to doubt the possibility of such a fact; and, if he should say he would not only use the same three ingredients in each of his compounds, but, in each case, would mix them in precisely the same proportions, you would either pronounce it an impossibility, or you would suppose he was going to deceive your senses by jugglery. But Nature is no juggler—neither does she perform impossibilities; yet she does accomplish, in the composition of almost every vegetable that grows, precisely the operation abovementioned. Out of carbon, hydrogen, and oxygen, she forms sugar, starch, and woody fibre; and *in each of these substances, the three ingredients of which they are formed, exist in exactly the same proportions.*

This is truly a wonderful operation, and beautifully illustrates the economy, so to speak, which seems a governing principle in all of Nature's doings. Instead of multiplying elements to an indefinite extent, she contrives to economize a few, in such a way, as to make them answer the desired end. How strange, that any person, who has ever contemplated the wonders of creation, as displayed in animal or vegetable life, can doubt, for a moment, the existence of a Supreme and All-Controling Power! Although we can analyze vegetable compounds, and separate, examine, and weigh their elementary ingredients, yet we cannot reunite them so as to produce the same substance which Nature formed from them in the living plant; neither can we say, with any certainty, how nature forms such different substances, by combining the same elements in the same proportions.

In reading the works of Johnston, Leibig, and other authors, who treat extensively on these subjects, you will find plausible theories and conjectures to explain the process by which one compound is converted into another in the living plant. Although such speculations and investigations are interesting and useful, they would occupy too much space, were I to attempt to place them before you. My highest aim in writing these letters, will be accomplished, if I can awaken in you a spirit of inquiry, and prepare your minds for the comprehension and reception of truths more wonderful and grand, than any I shall attempt to unfold. In my next letter, I propose to treat of the twelve substances named above, under separate heads.

J. McKinstry.

Greenport, N. Y., March 1st, 1849.

UTILITY OF FROGS.

I remember somewhere of reading that, many and many years ago, a number of frolicsome boys were one day watching frogs, at the side of a pond, and that, as any of them put their heads above the water, they pelted them down again with stones. One of the frogs appealing to the humanity of the boys, made this striking observation: "Children you do not consider, that though this may be sport to you, it is death to us." It is to be feared that the same propensity to maim and torture these poor, innocent reptiles prevails to some extent with the youth at the present day. But this is cruel—wicked—wrong; for the usefulness of frogs about our gardens and fields can scarcely be too highly estimated, as their food consists almost exclusively of worms, slugs, insects, and other small living things, which they seek among the plants and grass on the land.

Frogs, like the toad, it is well known, are hatched from eggs, laid early in the spring in shallow pools or near the edges of sluggish streams, which, when taken together, are called "spawn," and often resemble a mass of boiled sago, sprinkled with a large number of small black dots. The young tadpole, which is hatched from them, passes through several metamorphoses, and at the end of some weeks, be comes a "gaping, wide-mouthed, waddling frog." If you examine his tongue, you will observe that, instead of being rooted at the throat, as in other animals, it is fastened to his under lip, with its point directed towards the stomach. Nevertheless, this singular arrangement is well suited to his purposes, for his tongue, as an organ of prehension, is very effective, being flat, soft, and long, and covered with a viscous fluid, which enables him more readily to catch and secure his prey. When he wishes to use it, he lowers his under jaw, ejects and retracts it with the rapidity of light.

Instead of torturing these poor reptiles, it is recommended that every lad in the country, give place in some snug corner in the garden for a vessel holding a few gallons of water, buried nearly level with the surface of the ground, in which may be put one or more frogs, to be petted and cherished like any other domestic animal, and where its curious and interesting habits may be studied at leisure.

Rana.

FOREIGN AGRICULTURAL NEWS.

By the steamer America we are in receipt of our foreign journals to the 24th February.

Markets.—*Ashes*, firm; *Cotton*, an advance of ¼*d.* per lb., with very large sales, upwards of 270,000 bales having changed hands during the past four weeks; *Corn*, *Wheat*, and most other American products, with the exception of *Tobacco*, are lower; *Wool*, sales large and more animated.

Money is very abundant, and is loaned at short periods, at the rate of 2 to 3 per cent. per annum; *American Stocks* continue in good demand.

Fattening Pork on Oatmeal.—A prime Lancashire porker has been slaughtered at Garstrang, which weighed, when cut up, 671 lbs., and was valued at £15 7*s.* 6*d.* It was fed on oatmeal, and is stated to well repay the keeper.

Expeditious and Economical Washing.—A discovery is stated to have been made in England, by which a family's six weeks' washing can be accomplished before breakfast for less than *sixpence sterling*, and this, too, without a washerwoman.

Trees and Shrubs for Cemeteries.—The following trees and shrubs are recommended for church yards and cemeteries, wherever they are adapted to the climate:—English yew, holly, weeping willow, phillyrea alaternus, junipers, arbor vitæ, cypresses, and others not producing gay flowers, but possessing a deep evergreen foliage, with the exception of savin, which should not be used.—*Gardeners' Chronicle.*

How to Keep Rabbits from Barking Trees.—Soot, mixed with milk, or buttermilk, till as thick as paint, and laid on the trunks of the trees with a brush, on a dry day, is stated to be a preventive of rabbits gnawing off the bark from trees.—*Ibid.*

American Cheese in England.—Very excellent American cheese, quite equal to the finest dairies of Cheshire, have been imported and retailed at Sunderland, at 6*d.* per pound. The cheeses were about 56 lbs. weight each, and were quite sound, firm, and of good age for consumption.—*Durham Advertiser.*

Extraordinary Canary Bird.—At the Brackley Union Workhouse, Northamptonshire, there is a pair of Canary birds, the female of which, since March, 1848, has built eight nests, laid 46 eggs, hatched 40 birds, and reared 36 birds, and is now building the ninth nest.—*English Paper*

Melon Wine.—It was lately stated before the Academy of Sciences, at Paris, by M. Boucharett, that the melon yields an excellent white wine, which will keep for several centuries, and, if properly cultivated, may be made to render a handsome profit.

A New Freezing Mixture.—A mixture of equal weights of commercial hydrocloric acid and finely-powdered sulphate of zinc will produce a cold sufficient to sink the mercury in a thermometer from 50° to 20° F.—*Journ. de Pharm. et de Chim.*

Manures.—Subjoined are the prices of several sorts of manure:—Bone dust, 18*s.* 6*d.* per 28 lbs.; Half-inch bone, 17*s.* 6*d.* per 28 lbs.; Compost, £3 12*s.* 6*d.* per hhd., sufficient for three acres; Guano, Peruvian, £9 9*s.*; Bolivian, £9 9*s.*; African, £6 6*s.* to £7 10*s.* per ton, according to analysis and quantity; Gypsum, 30*s.* per ton; Muriate of ammonia, 25*s.* per cwt.; Muriate of lime, 6*s.* per cwt.; Nitrate of potash, (saltpetre,) £26 to £28 per ton; Nitrate of soda, £14 10*s.* to £15 per ton; Rape dust, £6 6*s.* per ton; Rape cake, £6 per ton; Sulphuric acid, 1¼*d.* per lb.—*Farmer's Herald.*

Indestructibility of Cork.—In taking down some portion of the ancient Château of the Rogue d'Oures, in France, it was found that the extremities of the oak girders, lodged in the walls, were perfectly preserved, although these timbers were supposed to have been in their places for upwards of 600 years. The whole of these extremities, buried in the walls, were completely wrapped round with plates of cork, the impermeability of which is too well known to be named here. In a process so cheap and simple, the experiment deserves to be repeated, more particularly for buildings we are more than usually anxious to preserve the timbers of.—*From the French.*

Effect of Food and Climate on the Horse.—If a London dray horse be conveyed to Arabia, and subjected to the same influences to which the native horses of that country are exposed, it will, in the course of some generations, present the leading characters of an Arabian horse. The head will gradually diminish in size, the limbs will become fine and clear, the massive proportions of the whole body will disappear, and not only will the external form of the native horses be acquired, but, along with that, something also of their chivalrous disposition. If the race, thus improved, be again conveyed to Europe, it will gradually deteriorate, and, in the course of some generations, will again acquire all its original properties.

This fact, which we state on the authority of Professor Pictet, of Geneva, seems to prove that the Arabian horse cannot exist in perfection in any of the western countries of Europe; and there can be little doubt that the humidity of the climate, and the influences indirectly arising from that cause, are the principal reasons of this change.—*Journal of Agriculture.*

Lime Essential in Madder Dyeing.—A remarkable discovery has been made in regard to madder dyeing, in the fact that lime is very essential in this process. It has been ascertained that madder, if not grown on a calcareous soil, is incapable of producing fast colors; but that, if in this case chalk be added to the madder, during dyeing, or if lime water be employed, the desired effect is produced. This may be explained from the circumstance, that a slight excess of lime exists in the roots of the madder when grown in a calcareous soil.

The Llama and Alpaca.—A communication has been received by the Paris Academy of Sciences, from M. Christian Bonafoux, giving an account of the attempt made, by order of the king of Holland, to acclimatize the llamas and alpacas of Chili. Four years ago, thirty-four of these animals, males and females, were imported into Holland, and put into the royal park, Scheviningen, near the Hague, where they have propagated freely. The climate does them no injury, and they merely seek the shelter prepared for them when the snow is on the ground.—*Year Book.*

Artificial Stone.—A new process has been discovered by Mr. Frederic Ransome, of England, for making artificial stone, by subjecting broken pieces of silica, (common flint,) for a time, to the action of caustic alkali boiling under pressure in a close vessel, forming a transparent silicated solution, which is evaporated to a specific gravity of 1,600, and is then intimately mixed with given proportions of well-washed sand, broken granite, or other materials of different degrees of hardness. The paste thus constituted, after being pressed into moulds, from which the most delicate impressions are readily received, is subjected to a red heat in a stove or kiln; by which operation the free or uncombined silica of the raw materials unites with the excess of alkali existing in the solution, thus forming a semi-vitreous compound, and rendering the artificial stone perfectly insoluble. This production must evidently be adapted to a comprehensive range of objects for decorative art and architectural purposes,—busts, vases flooring tiles, steps, balustrades, mouldings, capitals, shafts, and bases of columns, &c., &c. Even grindstones, and whetstones for scythes, have been made.—*Ibid.*

Editors' Table.

PRESIDENT TAYLOR'S VIEWS ON AGRICULTURE.—We are glad to perceive the prominent notice which agriculture receives at the hands of President Taylor, in his recent inaugural. "It shall be my study to recommend such constitutional measures to Congress as may be necessary and proper to secure *encouragement* and *protection* to the great interests of *agriculture*, commerce, and manufactures; to improve our rivers and harbors; to provide for the speedy extinguishing of the public debt; to enforce a strict accountability on the part of all officers of the government, and the utmost economy in all public expenditures." These are the sentiments of an enlightened, *comprehensive patriot*, not one of our modern, progressive, imitation statesmen, whose intellects, interests, and efforts begin and end with gulling a narrow-minded constituency with a show of patriotism, which, rightly named, is the most arrant demagogueism, intended for their own selfish purposes at the expense of the best interests of the whole Union. If the principles of President Taylor are followed out by Congress, it will not be long ere we have an intelligent *National Board of Agriculture*, such as was recommended by the immortal Washington, the benefits of which will eventually be felt from Maine to California.

NATIONAL AGRICULTURE—THE NEWLY-CREATED HOME DEPARTMENT.—We are rejoiced, yet disappointed by the late act of Congress in creating the *Home Department*, the object of which is, to withdraw from the other already overburdened branches of the Executive, some part of their duties not necessarily connected with them. Among these are the Patent Office, the Indian Department, some matters relating to internal improvements, and several minor subjects. This is all very well and calculated to simplify the operations of the machinery of government, while it will materially add to its efficiency, if administered with energy and intelligence.

But we have cause for an intense regret, that a clause for *the organization of an Agricultural Board*, in the bill originally introduced, was stricken out before its final passage. Thus it has ever been with the concerns of agriculture in our national councils. This immense and vital interest of our country, without the successful prosecution of which, the United States would be reduced to beggary and starvation within a single year, is thus left, as heretofore, to take care of itself, without one single act or countenance from the legislative action of our representatives. We are tired with arguing the point of the demands of agriculture on the favorable notice of the government. We can only express the wish, that those who reject every measure of assistance to this great interest, might be confined to their own windy productions for food and raiment, till their craving stomachs and shivering limbs prompted some aid to those on whom they are dependent for the daily comfort of both. When our farmers and planters become wearied with this neglect, they will take some measures to remedy it. We trust they will receive no attention till they have themselves manifested a becoming interest in the subject.

THE AMERICAN BEE KEEPER'S MANUAL; being a Practical Treatise on the History and Domestic Economy of the Honey Bee, Illustrating the Best Methods of their Management, through Every Branch of the Culture of this Insect; the Result of Many Years' Experience; by T. B. Miner, Embellished with thirty-five Beautiful Engravings, pp. 349, 12mo. C. M. Saxton, 121 Fulton street. Price $1.00. This treatise, which has been announced in glowing colors, we think quite equals the author's promises. It is written in a clear and comprehensive style, touching upon every subject of interest, in a manner that shows that the author fully understands the subject. Some of the elucidations are in a conversational style, of the most familiar and interesting character. The most prominent feature of the work, however, is the large number of illustrations it contains, which must have been a heavy item of the expense of getting it up. Every person, whether a bee keeper or not, should possess a copy of this interesting and instructive treatise.

NORTH BRITISH REVIEW.—We have received from Messrs. Leonard Scott & Co., 79 Fulton street, the February number of this sterling periodical. The articles are, as usual, of a high character; but the most interesting one of the present moment, is the review of Macaulay's History of England, the first two volumes of which we read immediately after being issued by the Messrs. Harper, with intense delight. In our humble judgment Mr. Macaulay will create a new era in historical writing.

THE WORKING FARMER; edited by James J. Mapes, and published by Kingman & Cross, corner of Nassau and Beekman streets, New York, pp. 16 quarto, monthly. The editor of the above is already known to the public as a lecturer, and a vigorous writer on several scientific subjects, and we have no doubt he will make an interesting periodical. We hope the publishers may be remunerated for their enterprise by a liberal subscription list.

PENNSYLVANIA CULTIVATOR AND MECHANIC AND IRON AND COAL REGISTER; Dr. Thomas Foster editor, Foster & Co. publishers, Harrisburg, Pa., pp. 32 octavo, monthly. Price $1 a year The Pennsylvania Cultivator is handsomely printed and illustrated, and abounds with highly-valuable practical matter. Will the publishers please to send us the first four numbers, as No. 5 is the only one received.

THE WISCONSIN FARMER AND NORTH WESTERN CULTIVATOR; Edited and published by Mark Miller, 101 Maine street, Racine, Wisconsin, pp. 24 octavo, monthly. This is a surprisingly well got up and ably edited publication, when we consider that fifteen years ago, scarce a white man had a fixed habitation within the limits of what is now a large state, probably with a population of at least 130,000 souls, and their numbers annually rapidly augmenting. There is no surer sign of the prosperity of a country founded upon the most solid basis, than an enlightened and improving system of agriculture; and if Wisconsin liberally supports such works as the above, we shall have great confidence in her soon attaining a high rank in the Union.

THE AMERICAN FRUIT BOOK; containing Directions for Raising, Propagating, and Managing Fruit Trees, Shrubs, and Plants; with a Description of the Best Varieties of Fruit, including New and Valuable Kinds; Embellished and Illustrated with Numerous Engravings. By S. W. Cole, Editor of the New-England Farmer, &c., &c., Boston: John P. Jewett, pp. 288, 18mo. The object of this treatise has been "to furnish a book adapted to the wants, and within the means of every family in the country—emphatically a work for the million—containing all the practical information necessary for the production and successful management of trees, and the selection of the best varieties of fruit, in order to excite greater attention, both in cultivator and consumer, in raising more and superior fruits." Published, and for sale by C. M. Saxton, 121 Fulton street, New York.

LUMBER IN MAINE.—In the town of Bangor, Me., the quantity of lumber surveyed in 1848 amounted to 212,932,449 feet.

COMPARATIVE VALUE OF STOCKS.—One share in the bank of earth is worth ten in the bank of paper

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, MARCH 17, 1849.

ASHES, Pots,	per 100 lbs.	$6 62	to	$6 69
Pearls,	do.	7 00	"	7 25
BALE ROPE,	lb.	6	"	8
BARK, Quercitron,	ton,	26 00	"	23 00
BEANS, White,	bush.	75	"	1 25
BEESWAX, Am. Yellow,	lb.	19	"	22
BOLT ROPE,	do.	11	"	12
BONES, ground,	bush.	40	"	55
BRISTLES, American,	lb.	25	"	65
BUTTER, Table,	do.	15	"	25
Shipping,	do.	9	"	15
CANDLES, Mould, Tallow,	do.	10	"	13
Sperm,	do.	25	"	40
Stearic,	do.	20	"	25
CHEESE,	do.	5	"	10
COAL, Anthracite,	2,000 lbs.	5 00	"	6 00
CORDAGE, American,	lb.	10	"	12
COTTON,	do.	6	"	10
COTTON BAGGING, Amer. hemp,	yard,	15	"	16
FEATHERS,	lb.	30	"	40
FLAX, American,	do.	8	"	9
FLOUR, Northern, Southern and West'rn	bbl.	5 25	"	6 06
Fancy,	do.	6 25	"	6 50
Richmond City Mills,	do.	6 75	"	7 00
Buckwheat,	do.	—	"	—
Rye,	do.	3 25	"	3 44
GRAIN—Wheat, Western,	bush.	1 10	"	1 35
Red and Mixed	do.	1 00	"	1 20
Rye,	do.	63	"	64
Corn, Northern,	do.	55	"	60
Southern,	do.	52	"	57
Barley,	do.	62	"	65
Oats,	do.	31	"	45
GUANO, Peruvian,	2,000 lbs.	50 00	"	50 00
" Patagonian	do	35 00	"	40 00
HAY, in bales,	do	50	"	56
HEMP, Russia, clean,	ton.	205 00	"	225 00
American, water-rotted,	do.	160 00	"	220 00
American, dew-rotted,	do.	140 00	"	200 00
HIDES, Dry Southern,	do.	7	"	8
HOPS,	lb.	4	"	12
HORNS,	100.	2 00	"	10 00
LEAD, pig,	do.	4 62	"	4 75
Pipes for Pumps, &c	lb.	5	"	7
MEAL, Corn,	bbl.	2 62	"	3 00
Corn,	hhd.	14 00	"	14 50
MOLASSES, New Orleans,	gal.	25	"	30
MUSTARD, American,	lb.	16	"	31
NAVAL STORES—Tar,	bbl.	1 75	"	2 00
Pitch,	do	1 25	"	1 75
Rosin,	do.	90	"	1 05
Turpentine,	do.	2 50	"	3 00
Spirits Turpentine, Southern,	gal.	35	"	37
OIL, Linseed, American,	do.	65	"	66
Castor,	do.	1 25	"	1 50
Lard,	do.	65	"	70
OIL CAKE,	100 lbs.	1 50	"	1 75
PEAS, Field,	bush.	75	"	1 25
Black-eyed,	2 do	1 25	"	1 50
PLASTER OF PARIS,	ton.	2 25	"	3 00
Ground, in bbls.,	of 300 lbs.	1 12	"	1 25
PROVISIONS—Beef, Mess,	bbl.	9 00	"	13 50
Prime,	do.	5 00	"	8 50
Smoked	lb.	6	"	12
Rounds, in pickle,	do.	4	"	6
Pork, Mess,	bbl.	10 00	"	13 00
Prime,	do.	7 00	"	10 00
Lard,	lb.	7	"	8
Bacon sides, Smoked,	do.	3	"	4½
In pickle,	do.	3	"	4
Hams, Smoked,	do.	5	"	9
Pickled,	do.	4	"	7
Shoulders, Smoked,	do.	4	"	5
Pickled,	do.	3	"	4
RICE,	100 lbs.	2 88	"	3 38
SALT,	sack,	1 17	"	1 30
Common,	bush.	20	"	35
SEEDS—Clover,	lb.	6	"	7½
Timothy,	bush.	2 00	"	3 50
Flax, clean	do.	1 30	"	1 40
rough,	do.	1 25	"	1 30
SODA, Ash, cont'g 80 per cent. soda,	lb.	3	"	—
Sulphate Soda, ground,	do.	1	"	—
SUGAR, New Orleans,	do.	4	"	6
SUMAC, American,	ton,	35 00	"	37 00
TALLOW,	lb.	8	"	9
TOBACCO,	do.	3	"	8
WHISKEY, American,	gal.	22	"	24
WOOLS, Saxony,	lb.	35	"	60
Merino,	do.	25	"	35
Half-blood	do.	20	"	25
Common do		18	"	20

NEW-YORK CATTLE MARKET.

At Market.—1,000 Beef Cattle, (800 southern, the remainder from this state and east,) 75 Cows and Calves, and 2,000 Sheep and Lambs.

Beef Cattle.—The market is firm in prices. The sales run from $6 to $9 per hundred. The number of head on hand is estimated to be 100.

Cows and Calves.—All taken at from $20 to $45.

Sheep and Lambs.—These are getting scarce. Sales from $2.25 to $6, according to quality. All sold.

REMARKS.—The changes have been so trifling since our last that we find nothing worth recording.

The Weather is very fine for the season, and spring has opened well. Planting has begun at the south under favorable auspices. Winter Wheat and Rye are looking well, generally, and we hear of very little winter-kill.

To Correspondents.—Communications have been received from Thomas Antisell, Wm H. Sotham, Solon Robinson, E. S., Enoch Reed, Jacob Hewes, John Wilkinson, J. McKinstry, M. W. Philips, George Gebhart, Col. W. Hampton, and Reviewer.

Fastidiousness.—A Subscriber.—It has ever been our aim since the establishment of this journal, not to admit anything in its columns, that would offend. Yet, in many instances, from the very nature of the subjects on which we necessarily write, it is impossible to avoid the use of terms and language that will not be more or less repulsive to a delicate, or fastidious mind. The passage in our March number, to which you take exception, was inserted at the *urgent request* of several individuals, and involves one of the most important principles in the economy of breeding, without a knowledge of which, the uninitiated would often fail to accomplish a very important end. If you possess "more enlightened views" on "The Cow—Her Diseases," &c.. than are expressed in our articles under that head, we should be pleased to receive them; but the articles above alluded to, are based on twenty-five years' successful practice of one of the most enlightened and distinguished veterinary surgeons of the age. We assure you that we have often been thanked by farmers for the very articles of which you complain, and they reckon them among the most valuable in our columns. However, we know that it is a delicate subject, and we will be doubly watchful hereafter not to offend more than is absolutely demanded of us by those who seek useful and practical information.

ACKNOWLEDGMENTS.—Proceedings of the Agricultural Convention of the State of Delaware, held at Dover, Jan. 17th, 1849; Catalogue of Mount-Airy Agricultural Institute; from Fowler's and Wells, of New York, Lectures on the Philosophy of Mesmerism, also, a small Treatise on the Cholera, its Causes Prevention, and Cure.

COLE'S AMERICAN FRUIT BOOK.

S. W. COLE, Esq., Editor of the New-England Farmer, and author of the popular work entitled the American Veterinarian, of which 22,000 copies have already been published, has, after years of patient labor and close investigation, completed his great work, entitled "Cole's American Fruit Book,"—a work which we believe is destined to have a more widely-extended circulation than any similar work, ever before offered to the American public. We believe so for the following reasons:—

1st. It is a mature work and a practical one, one upon which Mr. Cole has spent many years of study and close examination, and knowing the wants of the community, has met those wants in a plain, concise, and familiar manner, avoiding technicalities, and scientific specifications and definitions, useful only to the few, he has made a work intelligible to all. It is emphatically a book for *the people*.

2d. It will have an unprecedented sale on account of its cheapness. It makes a volume of 288 closely-printed pages. Illustrated with nearly two hundred beautifully-executed engravings, by Brown, and is sold for 50 cents firmly bound in leather, and 62½ cents in fancy cloth, with gilt backs. It contains full directions for raising, propagating and managing fruit trees, shrubs, and plants, with a description of the best varieties of fruits, embracing several new and valuable kinds; embellished with engravings, and outlines of fruit trees, and various other designs.

100 agents, active, intelligent, and honest, are wanted to sell this book, in every state in the Union. A cash capital of from $25 to $50 will be necessary. Address, (post paid,) the publishers, John P. Jewett & Co., 23 Cornhill, Boston. C. M. SAXTON, Agent for N. Y. city, and southern counties of New Jersey. apr2t

AMERICAN INDESTRUCTIBLE MINERAL PAINT.

RECENTLY discovered in Ohio, a most admirable and effective preservative from the effects of the weather, and preventive of *fire*, becoming in a short time of the consistence and qualities of slate itself. For Manufactories, Railroad Depôts, Roofs of all descriptions, and Public Buildings, it is invaluable. For an account of this paint, see p. 29, of the present number. For sale by the hundred, barrel, or ton, by WM. H. STARR, general agent for the proprietor, No. 67 Beekman street, New York. j3t

SHORTHORN DURHAM'S AT AUCTION.

THE subscriber being about to dispose of 50 acres of his farm, will offer at public sale 30 head of Shorthorn Durham cattle, (being about one half of his present herd,) on the 13th day of June next, at 11 o'clock in the forenoon, consisting of yearlings, two-year and three-year-old heifers, cows, and 11 young bulls from 10 months to 2½ years old. Great care has been observed and considerable expense incurred in selecting and breeding this stock, with reference to purity of blood and dairy qualities. The awards of the New-York State Agricultural Society, and the American Institute, of New York, attest the estimation in which this stock is held, whenever it has been exhibited for competition. About eight head of the above cattle are a purchase made from E. P. Prentice, Esq., of Albany, last May, being all of the shorthorns of that gentleman, and the product of his four selected cows, retained at his public sale. The animals have the strain of blood of the herd of Mr. Whitaker, of England, from whom Mr. Prentice made his principal importations. The other part of the lot of young animals partakes largely of the blood of the celebrated herd of Thomas Bates, Esq., of Yorkshire, England, from whom my importations have been derived, and are mostly of the get of my imported bulls, Duke of Wellington, and the premium bull Meteor. The heifers and cows are and will be principally in calf by these bulls.

For the information of southern gentlemen, who desire to introduce Durham stock into that region, and who entertain the opinion that climate is incongenial to its successful propagation there, I here introduce an extract from a letter I received from A. G. Summer, Esq., editor of the "South Carolinian," dated Columbia, 25th January, 1849.

"The bull you sold Col. Hampton, of this state, gives him great satisfaction. He is a fine animal and I only wish you could see some 20 head of his get now in his yard. They are the most superb yearlings ever bred in the south."

Further particulars and pedigrees of the stock will be issued one month previous to the sale. A credit of 6 to 18 months will be given.

GEO. VAIL.

apr.3t *Troy, N. Y., April 1st*, 1849.

POUDRETTE.

THE LODI MANUFACTURING CO. offer their new and improved Poudrette, for sale at their usual rates—1 bbl. $2; 3 bbls. $5, and $1.50 per barrel for any quantity over 7 barrels, delivered free of expense, on board of vessels in New York. At the factory, where vessels, drawing eight feet of water can come, it will be sold at 25 cents per bushel.

The expense per acre in manuring corn with Poudrette, will not amount to more than $4, reckoning 25 cents per bbl., freight and all the necessary labor included. On land previously manured, or good sward land, one gill to the hill is sufficient; on poor ground, a good crop can be raised by one gill to the hill at planting, and one at the last hoeing. The cost in *labor alone*, of manuring in the hill with barn-yard manure, will amount to more than the first cost of Poudrette, with all the freight and charges added; and the effects of this manure are quicker; the corn grows more vigorously, and comes to maturity earlier. A fair trial, *however small*, is respectfully solicited.

Apply, if by letter, post paid, to the LODI MANUFACTURING CO., 51 Liberty st., New York. f3t

STATIONERY, BLANK BOOKS, AND PAPER.

Francis & Loutrel, No. 77 Maiden Lane, N. Y.

MANUFACTURE all kinds of Blank Books and Stationery articles—Diamond Point Gold Pens—Letter Copying Presses—Manifold Letter Writers—superior Croton Ink, warranted to retain its jet-black color, which they sell at the very lowest prices.

We have also on hand every description of Foreign PAPER and STATIONERY—Cap, Letter, and Note Papers, Envelopes, Perforated Board, Bristol Board, Drawing Papers—Copy Books, Pocket Books, Card Cases, Port Folios, Scrap Books—Gold Paper, Tissue Paper—Chess Men, Backgammon Boards—Wax, Wafers, Slates, Pencils—Gold and Silver Pencil Cases—Writing Desks—Work Boxes—Quills—Tin Cash and Deed Boxes—and all articles kept by Stationers, at remarkably low prices.

Books suitable for County Clerks and Public Offices supplied.

Printing, Ruling, and Binding executed at the lowest rates.

☞ We should be pleased to have a call from those requiring articles in our line. Orders by mail will receive attention.

LEWIS FRANCIS, } FRANCIS & LOUTREL,
CYRUS H. LOUTREL, } *Stationers, 77 Maiden Lane, N. Y.*
Sept.1yr*.

MINER'S PATENT EQUILATERAL BEE HIVE.

THE price of the rights to individuals of this hive, offered in the Feb. No., of this paper for $1, in pamphlet form, with *full directions* to make it, is raised to $2 in consequence of the increased number of engravings, &c. beyond my anticipations. It is worth *five* times the price to any apiarian having several families of bees. Monies may be sent at my risk. Single hives with right, &c., $5. Hives with bees will also be furnished.

T. B. MINER,
apr3t No. 40 Peck Slip, N. Y.

ANALYSIS OF SOILS, MANURES, &c.

IN order to afford to Practical Agriculture all the benefits which the recent discoveries in chemistry and the collateral sciences are capable of yielding, the American Agricultural Association have established a *Chemical Laboratory* in which agriculturists in the Union can have soils and manures analized, and to spread these advantages as widely as possible, the following low rates of charge have been adopted :—

TERMS.

1. Complete analysis of a soil so as to specify the quantity of each ingredient, with recommendation of the proper manures required, $5.00
2. Approximate analysis of soil or subsoil, to determine the presence of a particular ingredient, 1.00
3. Analysis of bone dust, gypsum, &c., when the amount of one ingredient only is required, 0.50
4. Guano analysis, 1.00
5. A correspondence on a particular subject, where no substance is forwarded, must enclose 1.00

Correspondence will be opened with every part of the Union so that information may be obtained on matters connected with practical agriculture.

Samples of soils, manures, (about 1 lb. weight of each,) and letters to be forwarded, (post paid,) addressed to Dr. Thomas Antisell, Laboratory of the American Agricultural Association, 140 Grand st., corner of Elm, New York.

apr.1tg

ALBANY AGRICULTURAL WAREHOUSE AND SEED STORE.

Removed from stand No. 10 and 12 Green street, to the spacious New Store No. 369 Broadway, a few doors South of the Post Office, Albany, N. Y.

THE subscriber being a sufferer from fire, in common with a large portion of the citizens of Albany (having lost his store and stock on the morning of the 29th of October last), has secured for a term of years the new and extensive store, No. 369 Broadway, or old Market street, a few doors south from the Post Office. This store being 145 feet deep, and four stories high, is much larger than his former one and running through from Broadway to the Canal basin—Broadway being the principal thoroughfare in the city, between the boat landings and depôts, the location is readily found. These advantages, with the increased facilities, will enable him to transact many times the business heretofore done by him, and more convenient for the trade generally.

In connection with these changes, he is erecting an extensive manufactory in the central part of the city, sufficiently large to accommodate over 100 mechanics, and a proportionate amount of labor-saving machinery, which will enable him at all times to execute all orders with despatch. And he solicits the continuance of that very liberal patronage heretofore bestowed upon his establishment.

H. L. EMERY.

N. B. It is his intention to establish branches at Rochester and Buffalo the coming spring, each to be under the charge of experienced brothers of the subscriber.

COMMERCIAL GARDEN AND NURSERY.

PARSONS & CO., at Flushing, near New York. The proprietors of this establishment invite public attention to their large assortment of every desirable variety of Fruit and Ornamental Tree or Shrub. Their importations of everything new in Europe are annually continued, and they offer a very large variety of Ornamental Trees and Shrubs imported expressly for arboretums and pleasure grounds. Their collection of Roses is anually enriched by novelties from abroad, many of which may be found described in their new work on the Rose, recently published. Fruit Trees receive their particular attention, and are propagated under their personal supervision; this care, with their possession of extensive specimen grounds, in which is tested every variety of fruit they cultivate, enables them confidently to guarantee the genuineness of the varieties.

Their care in pruning and cultivation enables them also to send out thrifty and well-formed trees. From their large scale of propagation, they can offer to dealers very liberal discounts, where hundreds or thousands are taken. Orders or inquiries can be addressed to the proprietors at Flushing, near New York, where catalogues will also be furnished. They have established a Branch at Brighton Depôt near Boston and by the entire success of their trees transplanted thither have thoroughly proved the superior adaptation of Long-Island Trees to the soil and climate of any part of New England. This they attribute to the perfect maturity attained by the wood before frost, which renders the trees suitable for transportation to any latitude.

At the season of transplanting, a salesman will be at their Brighton Branch to furnish those who may prefer obtaining their supply thence. mhtf

LAND FOR SALE.

FOR SALE—2,000 acres of land lying in the marl region of Eastern Virginia, and within two to seven miles of the town of Fredericksburg. Apply to LAYTON Y. ATKINS,
dec. 1yr. Fredericksburg, Va.

NEW-YORK AGRICULTURAL WAREHOUSE,

BY A. B. ALLEN & CO.,

189 & 191 *Water Street, New York*.

THE *Implements* kept, embrace upwards of FIFTY different kinds of Plows, a great variety of Harrows, Cultivators, Rollers, Seed Sowers, Horse Powers, Grain Cradles, Threshing and Fanning Machines, Mills, Hay Cutters, Corn Shellers, Shovels, Spades, Hoes, Scythes, Rakes, Wagons, Wheels, Carts, Wheelbarrows, Pumps, Rice Threshers and Hullers, Road Scrapers, Axes, Chains, &c., &c. These implements are mostly made up from NEW and HIGHLY-IMPROVED patterns, and are warranted to be of the best materials, and put together in the strongest manner, and of a superior finish.

Horticultural Tools—A complete assortment.

Castings, Skeleton Plows, Harrow Teeth, and Iron Work of all kinds done to order in the cheapest and best manner.

Steam Engines, Sugar Boilers, Sugar Mills, Saw Mills, Kettles, Cauldrons, &c., for Plantations.

Wire Cloth and Sieves—Different kinds and sizes, kept constantly on hand.

Seeds for the Field and Garden—Such as Improved Winter and Spring Wheat, Rye, Barley, Oats, Corn, Beans, Peas, Turnip, Cabbage, Beet, Carrot, Parsnip, Clover and Grass Seeds, Improved varieties of Potatoes, &c., &c. These are waranted fresh and superior of their kind.

Fertilizers—Peruvian and African Guano, Lime, Plaster of Paris, Bone Dust, &c., &c.

Fruit and Ornamental Trees and Shrubs—Orders taken for these, and executed from a choice of the best Nurseries, Gardens, and Conservatories in the United States.

Horses, Cattle, Sheep, and Swine—Orders received for stock of all kinds, to be executed to the best advantage, and shipped in the most careful manner.

Agricultural Books—A general assortment of these for sale.

Produce on Consignment—All kinds of Agricultural Produce will be received for sale on consignment.

A Catalogue of the above Implements, Seeds, &c. of 100 pages, handsomely illustrated with plates, will be forwarded, by mail, when requested, post paid.

EAGLE PLOWS.

CAUTION.—Many implements having been sold under the name of the *Eagle Plow*, which are not genuine, this is to give notice that all plows sold in this city under that name, to ensure confidence, will have "Ruggles, Nourse, & Mason, Boston and Worcester, Mass.," and "A. B. Allen & Co., New York." marked on the beam, and no others purchased here, can be relied upon as genuine without this brand.

☞Be *particular*, also, as to the *name, number*, and *street*, which should be

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